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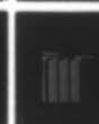
ARMY ENGINEER WATERWAYS EXPERIMENT STATION VICKSBURG--ETC F/G 13/2  
APPLICATION OF MAPS TO THE SALINAS-MONTEREY URBAN STUDY. APPEND--ETC(U)  
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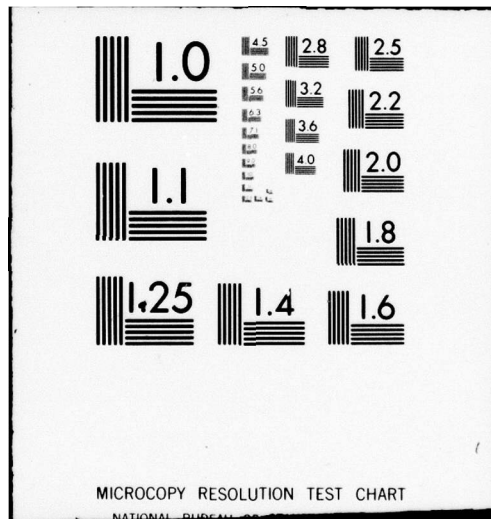
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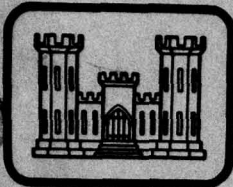
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MISCELLANEOUS PAPER EL-79-4

**6 APPLICATION OF MAPS TO THE  
SALINAS-MONTEREY URBAN STUDY.**  
Appendices B, F and G.

10 Thomas M. Walski Anthony C. Gibson

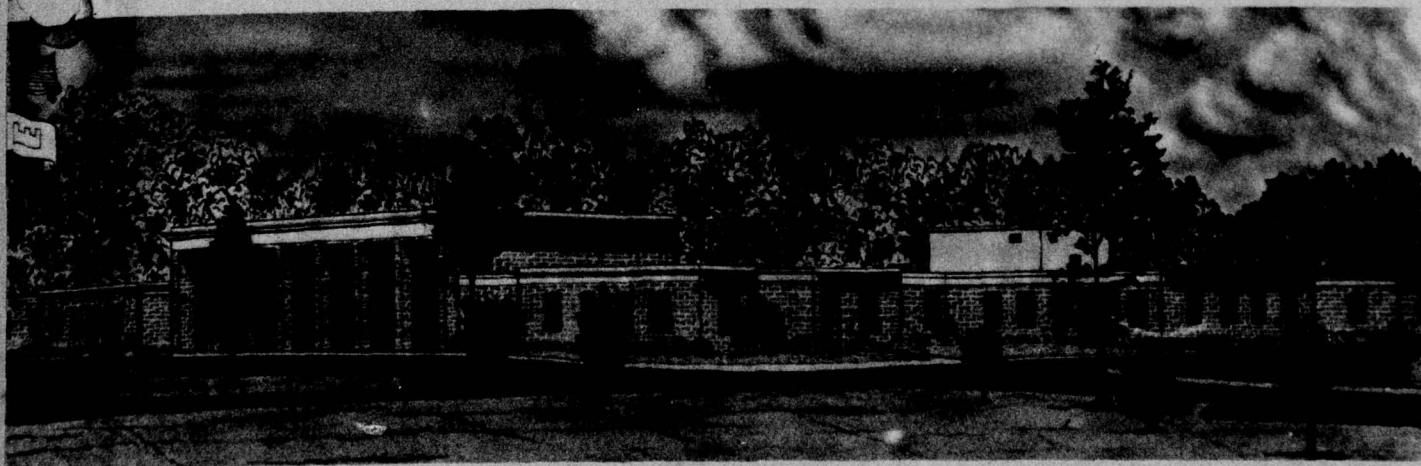
Environmental Laboratory  
U. S. Army Engineer Waterways Experiment Station  
P. O. Box 631, Vicksburg, Miss. 39180

11 Aug 1979  
9 Final Report

12 162

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Appendices B, F and G

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APPENDIX B: HEADWATER DATA

1. This appendix presents the data contained in the MAPS headwater data base. It consists of the title for the headwater, the size of the drainage area above the reservoir site or diversion, and the flow at the reservoir site or diversion for each month of the design dry cycle.

2. The flows are given in units of cubic feet per second (cfs) and million gallons per day (mgd). A value for the runoff rate in inches per year (in./yr) for the drainage area is also given.

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WADDELL CREEK

.610E+01 SQ. MILES

DRAINAGE TIME STEP	AREA FLOW (CFS)	AREA FLOW (MGD)	610E+02 RUNOFF (IN/YR)
1	.166E+02	.108E+02	.372E+02
2	.104E+02	.674E+01	.232E+02
3	.657E+01	.427E+01	.147E+02
4	.389E+01	.253E+01	.870E+01
5	.312E+01	.203E+01	.698E+01
6	.264E+01	.172E+01	.591E+01
7	.274E+01	.178E+01	.613E+01
8	.195E+01	.127E+01	.436E+01
9	.159E+01	.103E+01	.356E+01
10	.161E+01	.105E+01	.361E+01
11	.153E+01	.993E+00	.342E+01
12	.224E+01	.146E+01	.562E+01
13	.185E+01	.120E+01	.413E+01
14	.103E+01	.501E+00	.231E+01
15	.774E+00	.502E+00	.173E+01
16	.715E+00	.465E+00	.160E+01
17	.635E+00	.412E+00	.142E+01
18	.595E+00	.386E+00	.133E+01
19	.581E+00	.377E+00	.130E+01
20	.105E+01	.682E+00	.235E+01
21	.171E+01	.111E+01	.382E+01
22	.246E+01	.160E+01	.550E+01
23	.133E+01	.862E+00	.297E+01
24	.217E+01	.131E+01	.485E+01
25	.662E+00	.430E+00	.148E+01
26	.841E+00	.546E+00	.188E+01
27	.291E+00	.189E+00	.650E+00
28	.872E-01	.566E-01	.195E+00
29	.192E-01	.125E-01	.436E-01
30	.368E+01	.239E+01	.823E+01



HEADWATER NO. 3  
SCOTTIS CREEK

DRAINAGE AREA TIME STEP	FLOW (CFS)	FLOW (MGD)	.120E+02 SQ. MILES RUNOFF (IN/YR)
1	.327E+02	.212E+02	.372E+02
2	.204E+02	.133E+02	.232E+02
3	.129E+02	.840E+01	.147E+02
4	.765E+01	.497E+01	.870E+01
5	.614E+01	.399E+01	.698E+01
6	.520E+01	.338E+01	.591E+01
7	.539E+01	.350E+01	.613E+01
8	.384E+01	.249E+01	.436E+01
9	.313E+01	.203E+01	.356E+01
10	.318E+01	.206E+01	.361E+01
11	.301E+01	.195E+01	.342E+01
12	.442E+01	.287E+01	.502E+01
13	.363E+01	.236E+01	.413E+01
14	.203E+01	.132E+01	.231E+01
15	.152E+01	.988E+00	.173E+01
16	.141E+01	.914E+00	.160E+01
17	.125E+01	.811E+00	.142E+01
18	.117E+01	.760E+00	.133E+01
19	.114E+01	.743E+00	.130E+01
20	.207E+01	.134E+01	.235E+01
21	.336E+01	.218E+01	.362E+01
22	.484E+01	.314E+01	.550E+01
23	.261E+01	.170E+01	.297E+01
24	.427E+01	.277E+01	.485E+01
25	.130E+01	.845E+00	.148E+01
26	.165E+01	.107E+01	.188E+01
27	.572E+00	.371E+00	.650E+00
28	.172E+00	.111E+00	.195E+00
29	.378E-01	.246E-01	.430E-01
30	.724E-01	.470E-01	.823E-01

HEADWATER NO. 4  
SAN VINCENTE CREEK

TIME STEP	DRAINAGE AREA FLOW (CFS)	FLOW (MGD)	.950E+01 SQ. MILES RUNOFF (IN/YR)
1	.259E+02	.168E+02	.572E+02
2	.162E+02	.105E+02	.232E+02
3	.102E+02	.665E+01	.147E+02
4	.606E+01	.393E+01	.870E+01
5	.486E+01	.316E+01	.698E+01
6	.412E+01	.267E+01	.591E+01
7	.427E+01	.277E+01	.613E+01
8	.304E+01	.197E+01	.436E+01
9	.248E+01	.161E+01	.356E+01
10	.251E+01	.163E+01	.361E+01
11	.238E+01	.155E+01	.342E+01
12	.350E+01	.227E+01	.502E+01
13	.288E+01	.187E+01	.413E+01
14	.161E+01	.104E+01	.231E+01
15	.120E+01	.782E+00	.173E+01
16	.111E+01	.724E+00	.160E+01
17	.969E+00	.642E+00	.142E+01
18	.926E+00	.601E+00	.133E+01
19	.905E+00	.588E+00	.130E+01
20	.164E+01	.106E+01	.235E+01
21	.266E+01	.173E+01	.382E+01
22	.363E+01	.249E+01	.550E+01
23	.207E+01	.134E+01	.297E+01
24	.338E+01	.219E+01	.485E+01
25	.103E+01	.669E+00	.198E+01
26	.131E+01	.850E+00	.188E+01
27	.453E+00	.294E+00	.650E+00
28	.136E+00	.882E-01	.195E+00
29	.299E-01	.194E-01	.430E-01
30	.573E+01	.372E+01	.823E+01



HEADWATER NO. 5  
LAUNA CREEK

DRAINAGE AREA	TIME	FLOW	FLOW	RUNOFF
STEP	(CFS)	(MGD)	(MGD)	(IN/YR)
1	.128E+02	.852E+01	.852E+01	.372E+02
2	.799E+01	.519E+01	.519E+01	.252E+02
3	.506E+01	.329E+01	.329E+01	.147E+02
4	.300E+01	.195E+01	.195E+01	.870E+01
5	.240E+01	.156E+01	.156E+01	.698E+01
6	.204E+01	.132E+01	.132E+01	.591E+01
7	.211E+01	.137E+01	.137E+01	.613E+01
8	.150E+01	.975E+00	.975E+00	.436E+01
9	.123E+01	.796E+00	.796E+00	.356E+01
10	.124E+01	.808E+00	.808E+00	.361E+01
11	.118E+01	.765E+00	.765E+00	.342E+01
12	.173E+01	.112E+01	.112E+01	.502E+01
13	.142E+01	.924E+00	.924E+00	.413E+01
14	.796E+00	.517E+00	.517E+00	.231E+01
15	.596E+00	.387E+00	.387E+00	.173E+01
16	.551E+00	.358E+00	.358E+00	.160E+01
17	.489E+00	.318E+00	.318E+00	.142E+01
18	.458E+00	.298E+00	.298E+00	.133E+01
19	.448E+00	.291E+00	.291E+00	.130E+01
20	.810E+00	.526E+00	.526E+00	.235E+01
21	.132E+01	.855E+00	.855E+00	.382E+01
22	.189E+01	.123E+01	.123E+01	.550E+01
23	.102E+01	.664E+00	.664E+00	.297E+01
24	.167E+01	.109E+01	.109E+01	.485E+01
25	.510E+00	.331E+00	.331E+00	.148E+01
26	.648E+00	.421E+00	.421E+00	.188E+01
27	.224E+00	.145E+00	.145E+00	.650E+00
28	.672E+01	.436E+01	.436E+01	.195E+02
29	.148E+01	.962E+02	.962E+02	.430E+01
30	.284E+01	.184E+01	.184E+01	.823E+01



HEADWATER NO. 6  
MAJORS CREEK

DRAINAGE AREA	TIME FLOW	FLOW	RUNOFF
STEP (CFS)	(MGD)	(MGD)	(IN/YR)
1	.946E+01	.614E+01	.306E+02
2	.589E+01	.383E+01	.187E+02
3	.375E+01	.244E+01	.119E+02
4	.189E+01	.123E+01	.600E+01
5	.180E+01	.117E+01	.576E+01
6	.174E+01	.113E+01	.552E+01
7	.171E+01	.111E+01	.542E+01
8	.163E+01	.106E+01	.518E+01
9	.153E+01	.995E+00	.486E+01
10	.141E+01	.913E+00	.446E+01
11	.149E+01	.968E+00	.473E+01
12	.161E+01	.104E+01	.510E+01
13	.155E+01	.101E+01	.493E+01
14	.132E+01	.856E+00	.418E+01
15	.110E+01	.714E+00	.349E+01
16	.110E+01	.716E+00	.350E+01
17	.103E+01	.669E+00	.327E+01
18	.965E+00	.626E+00	.306E+01
19	.983E+00	.639E+00	.312E+01
20	.125E+01	.811E+00	.396E+01
21	.151E+01	.982E+00	.480E+01
22	.170E+01	.111E+01	.520E+01
23	.140E+01	.909E+00	.444E+01
24	.163E+01	.106E+01	.516E+01
25	.117E+01	.761E+00	.372E+01
26	.116E+01	.763E+00	.373E+01
27	.681E+00	.442E+00	.216E+01
28	.303E+00	.196E+00	.960E+00
29	.756E+01	.491E+01	.240E+02
30	.186E+01	.121E+01	.590E+01

HEADWATER NO. 7

SAN LORENZO RIVER

DRAINAGE AREA .650E+01 SQ. MILES

TIME STEP	FLOW (CFS)	FLOW (MGD)	RUNOFF (IN/YR)
1	.136E+02	.882E+01	.285E+02
2	.572E+01	.371E+01	.120E+02
3	.279E+01	.181E+01	.585E+01
4	.122E+01	.792E+00	.256E+01
5	.777E+00	.504E+00	.163E+01
6	.629E+00	.408E+00	.152E+01
7	.175E+01	.114E+01	.368E+01
8	.110E+01	.712E+00	.250E+01
9	.943E+00	.613E+00	.198E+01
10	.929E+00	.603E+00	.195E+01
11	.110E+01	.712E+00	.250E+01
12	.159E+01	.103E+01	.334E+01
13	.132E+01	.857E+00	.277E+01
14	.619E+00	.402E+00	.150E+01
15	.446E+00	.291E+00	.946E+00
16	.138E+00	.897E-01	.290E+00
17	.281E+00	.183E+00	.590E+00
18	.310E+00	.201E+00	.650E+00
19	.338E+00	.220E+00	.710E+00
20	.610E+00	.396E+00	.128E+01
21	.991E+00	.644E+00	.208E+01
22	.142E+01	.925E+00	.299E+01
23	.772E+00	.501E+00	.182E+01
24	.125E+01	.811E+00	.262E+01
25	.476E+00	.309E+00	.100E+01
26	.486E+00	.316E+00	.102E+01
27	.167E+00	.108E+00	.556E+00
28	.476E-01	.309E-01	.100E+00
29	.953E-02	.619E-02	.280E-01
30	.213E+01	.139E+01	.408E+01

HEADWATER NO. 8  
ZAYANTE CREEK

TIME STEP	DRAINAGE AREA FLOW (CFS)	FLOW (MGD)	.950E+01 SQ. MILES RUNOFF (IN/YR)
1	.124E+02	.805E+01	.178E+02
2	.524E+01	.341E+01	.755E+01
3	.256E+01	.166E+01	.367E+01
4	.111E+01	.724E+00	.160E+01
5	.710E+00	.451E+00	.102E+01
6	.574E+00	.373E+00	.824E+00
7	.160E+01	.104E+01	.230E+01
8	.100E+01	.651E+00	.144E+01
9	.864E+00	.561E+00	.124E+01
10	.850E+00	.552E+00	.122E+01
11	.100E+01	.651E+00	.144E+01
12	.146E+01	.945E+00	.209E+01
13	.120E+01	.782E+00	.175E+01
14	.565E+00	.367E+00	.812E+00
15	.411E+00	.267E+00	.590E+00
16	.129E+00	.837E-01	.185E+00
17	.249E+00	.161E+00	.357E+00
18	.283E+00	.184E+00	.406E+00
19	.508E+00	.200E+00	.403E+00
20	.557E+00	.362E+00	.800E+00
21	.905E+00	.588E+00	.130E+01
22	.130E+01	.846E+00	.187E+01
23	.703E+00	.457E+00	.101E+01
24	.115E+01	.746E+00	.165E+01
25	.437E+00	.284E+00	.627E+00
26	.446E+00	.289E+00	.640E+00
27	.154E+00	.999E-01	.221E+00
28	.460E-01	.298E-01	.650E-01
29	.104E-01	.678E-02	.150E-01
30	.195E+01	.127E+01	.280E+01



HEADWATER NO. 9  
WEST BRANCH OF SQUEL CREEK

TIME STEP	DRAINAGE AREA FLOW (CFS)	FLOW (MGD)	.780E+01 SQ. MILES RUNOFF (IN/YR)
1	.112E+02	.728E+01	.196E+02
2	.376E+01	.244E+01	.658E+01
3	.205E+01	.133E+01	.359E+01
4	.168E+01	.109E+01	.294E+01
5	.949E+00	.616E+00	.166E+01
6	.600E+00	.390E+00	.105E+01
7	.137E+01	.891E+00	.240E+01
8	.105E+01	.679E+00	.163E+01
9	.102E+01	.661E+00	.178E+01
10	.949E+00	.616E+00	.166E+01
11	.132E+01	.854E+00	.230E+01
12	.208E+01	.135E+01	.363E+01
13	.132E+01	.858E+00	.231E+01
14	.517E+00	.336E+00	.905E+00
15	.265E+00	.172E+00	.464E+00
16	.144E+00	.932E-01	.251E+00
17	.328E+00	.213E+00	.573E+00
18	.233E+00	.151E+00	.407E+00
19	.393E+00	.255E+00	.688E+00
20	.629E+00	.408E+00	.110E+01
21	.114E+01	.743E+00	.200E+01
22	.783E+00	.509E+00	.137E+01
23	.240E+00	.156E+00	.420E+00
24	.110E+01	.713E+00	.192E+01
25	.545E+00	.354E+00	.953E+00
26	.376E+00	.244E+00	.658E+00
27	.158E+00	.103E+00	.277E+00
28	.515E-01	.334E-01	.900E-01
29	.521E+00	.209E+00	.562E+00
30	.187E+00	.121E+00	.327E+00

HEADWATER NO. 10  
MAIN BRANCH OF SQUEL CREEK

DRAINAGE AREA		.137E+02 SQ. MILES	
TIME	FLOW	FLOW	RUNOFF
STEP	(CFS)	(MGD)	(IN/YR)
1	.197E+02	.128E+02	.196E+02
2	.661E+01	.429E+01	.658E+01
3	.361E+01	.234E+01	.359E+01
4	.295E+01	.192E+01	.294E+01
5	.167E+01	.108E+01	.166E+01
6	.105E+01	.685E+00	.105E+01
7	.241E+01	.157E+01	.240E+01
8	.184E+01	.119E+01	.183E+01
9	.179E+01	.116E+01	.178E+01
10	.167E+01	.108E+01	.166E+01
11	.231E+01	.150E+01	.230E+01
12	.365E+01	.237E+01	.363E+01
13	.232E+01	.151E+01	.231E+01
14	.909E+00	.590E+00	.905E+00
15	.466E+00	.303E+00	.464E+00
16	.252E+00	.164E+00	.251E+00
17	.575E+00	.374E+00	.573E+00
18	.409E+00	.265E+00	.407E+00
19	.691E+00	.449E+00	.688E+00
20	.110E+01	.717E+00	.110E+01
21	.201E+01	.130E+01	.200E+01
22	.138E+01	.893E+00	.137E+01
23	.422E+00	.274E+00	.420E+00
24	.193E+01	.125E+01	.192E+01
25	.957E+00	.621E+00	.953E+00
26	.661E+00	.429E+00	.658E+00
27	.278E+00	.181E+00	.277E+00
28	.904E+01	.587E+01	.900E+01
29	.564E+00	.366E+00	.562E+00
30	.528E+00	.213E+00	.527E+00

HEADWATER NO. 11  
APTOS CREEK

DRAINAGE AREA TIME STEP	FLOW (CFS)	FLOW (MGD)	.992E+01 SQ. MILES RUNOFF (IN/YR)
1	.257E+02	.167E+02	.353E+02
2	.916E+01	.595E+01	.126E+02
3	.418E+01	.272E+01	.575E+01
4	.371E+01	.241E+01	.510E+01
5	.245E+01	.159E+01	.337E+01
6	.183E+01	.119E+01	.252E+01
7	.396E+01	.257E+01	.544E+01
8	.276E+01	.179E+01	.379E+01
9	.247E+01	.161E+01	.340E+01
10	.229E+01	.149E+01	.315E+01
11	.281E+01	.183E+01	.387E+01
12	.349E+01	.227E+01	.480E+01
13	.283E+01	.184E+01	.389E+01
14	.164E+01	.107E+01	.226E+01
15	.149E+01	.968E+00	.205E+01
16	.122E+01	.793E+00	.168E+01
17	.156E+01	.101E+01	.214E+01
18	.144E+01	.945E+00	.198E+01
19	.145E+01	.944E+00	.200E+01
20	.109E+02	.708E+01	.150E+02
21	.276E+01	.179E+01	.380E+01
22	.218E+01	.142E+01	.300E+01
23	.131E+01	.850E+00	.180E+01
24	.267E+01	.173E+01	.367E+01
25	.182E+01	.118E+01	.250E+01
26	.159E+01	.103E+01	.218E+01
27	.118E+01	.765E+00	.162E+01
28	.960E+00	.623E+00	.132E+01
29	.143E+01	.925E+00	.196E+01
30	.118E+01	.765E+00	.162E+01



HEADWATER NO. 12  
CORRALITOS CREEK

TIME STEP	DRAINAGE AREA (CFS)	FLOW (MGD)	FLOW (MGD)	.278E+02 SQ. MILES RUNOFF (IN/YR)
1	.306E+02	.198E+02	.150E+02	
2	.670E+01	.435E+01	.329E+01	
3	.365E+01	.237E+01	.179E+01	
4	.351E+01	.228E+01	.172E+01	
5	.273E+01	.177E+01	.134E+01	
6	.238E+01	.155E+01	.117E+01	
7	.644E+01	.418E+01	.316E+01	
8	.245E+01	.159E+01	.120E+01	
9	.273E+01	.177E+01	.134E+01	
10	.302E+01	.196E+01	.148E+01	
11	.355E+01	.230E+01	.174E+01	
12	.416E+01	.270E+01	.204E+01	
13	.410E+01	.266E+01	.201E+01	
14	.236E+01	.154E+01	.116E+01	
15	.208E+01	.135E+01	.102E+01	
16	.181E+01	.118E+01	.890E+00	
17	.151E+01	.983E+00	.743E+00	
18	.115E+01	.744E+00	.562E+00	
19	.168E+01	.109E+01	.825E+00	
20	.151E+01	.983E+00	.743E+00	
21	.226E+01	.147E+01	.111E+01	
22	.279E+01	.181E+01	.137E+01	
23	.178E+01	.116E+01	.873E+00	
24	.236E+01	.154E+01	.116E+01	
25	.208E+01	.135E+01	.102E+01	
26	.149E+01	.970E+00	.733E+00	
27	.146E+01	.949E+00	.717E+00	
28	.163E+01	.106E+01	.802E+00	
29	.159E+01	.103E+01	.780E+00	
30	.146E+01	.949E+00	.717E+00	

HEADWATER NO. 13  
PESCADERO CREEK

TIME STEP	DRAINAGE AREA (CFS)	FLOW (MGD)	RUNOFF (IN/YR)
1	.696E+01	.452E+01	.100E+02
2	.114E+01	.737E+00	.165E+01
3	.397E+00	.258E+00	.570E+00
4	.555E+00	.231E+00	.510E+00
5	.174E+00	.113E+00	.250E+00
6	.836E+01	.543E+01	.120E+00
7	.265E+00	.172E+00	.380E+00
8	.230E+00	.149E+00	.330E+00
9	.341E+00	.222E+00	.490E+00
10	.306E+00	.199E+00	.440E+00
11	.411E+00	.267E+00	.590E+00
12	.390E+00	.253E+00	.560E+00
13	.202E+00	.131E+00	.290E+00
14	.118E+00	.769E-01	.170E+00
15	.696E-02	.452E-02	.100E-01
16	0.	0.	0.
17	0.	0.	0.
18	0.	0.	0.
19	0.	0.	0.
20	.487E-01	.317E-01	.700E-01
21	.501E+00	.326E+00	.720E+00
22	.181E+00	.118E+00	.260E+00
23	0.	0.	0.
24	.453E+00	.294E+00	.650E+00
25	0.	0.	0.
26	0.	0.	0.
27	0.	0.	0.
28	0.	0.	0.
29	0.	0.	0.
30	0.	0.	0.



HEADWATER NO. 14  
PAJARO RIVER

DRAINAGE AREA

.118E+04 SQ. MILES

TIME STEP	FLOW (CFS)	FLOW (MGD)	RUNOFF (IN/YR)
1	.236E+03	.153E+03	.273E+01
2	.624E+02	.405E+02	.721E+00
3	.203E+02	.132E+02	.235E+00
4	.901E+01	.585E+01	.104E+00
5	.629E+01	.408E+01	.727E-01
6	.519E+01	.337E+01	.600E-01
7	.525E+01	.341E+01	.607E-01
8	.425E+01	.261E+01	.107E+00
9	.998E+01	.648E+01	.115E+00
10	.758E+01	.492E+01	.876E-01
11	.752E+01	.488E+01	.870E-01
12	.859E+01	.558E+01	.993E-01
13	.596E+01	.387E+01	.690E-01
14	.247E+01	.160E+01	.286E-01
15	.432E+01	.280E+01	.499E-01
16	.397E+01	.258E+01	.459E-01
17	.382E+01	.248E+01	.441E-01
18	.854E+00	.554E+00	.987E-02
19	.192E+01	.125E+01	.222E-01
20	.115E+01	.750E+00	.134E-01
21	.894E+00	.580E+00	.103E-01
22	.176E+01	.114E+01	.203E-01
23	.148E+01	.959E+00	.171E-01
24	.150E+01	.972E+00	.173E-01
25	.100E+01	.652E+00	.116E-01
26	.753E+00	.489E+00	.871E-02
27	.663E+00	.430E+00	.766E-02
28	.482E+00	.313E+00	.557E-02
29	.663E+00	.430E+00	.766E-02
30	.261E+00	.170E+00	.302E-02

HEADWATER NO. 15  
CORNCOB CREEK

DRAINAGE AREA	.100E+01 SQ. MILES		
TIME	FLOW	FLOW	RUNOFF
STEP	(CFS)	(MGD)	(IN/YR)
1	.110E+01	.714E+00	.150E+02
2	.241E+00	.157E+00	.329E+01
3	.131E+00	.852E-01	.179E+01
4	.126E+00	.819E-01	.172E+01
5	.982E-01	.638E-01	.134E+01
6	.858E-01	.557E-01	.117E+01
7	.232E+00	.150E+00	.316E+01
8	.880E-01	.571E-01	.120E+01
9	.982E-01	.638E-01	.134E+01
10	.108E+00	.704E-01	.148E+01
11	.128E+00	.828E-01	.174E+01
12	.150E+00	.971E-01	.204E+01
13	.147E+00	.957E-01	.201E+01
14	.850E-01	.552E-01	.116E+01
15	.748E-01	.486E-01	.102E+01
16	.652E-01	.424E-01	.890E+00
17	.545E-01	.354E-01	.743E+00
18	.412E-01	.268E-01	.562E+00
19	.605E-01	.393E-01	.825E+00
20	.545E-01	.354E-01	.743E+00
21	.814E-01	.528E-01	.111E+01
22	.100E+00	.652E-01	.137E+01
23	.640E-01	.416E-01	.873E+00
24	.850E-01	.552E-01	.116E+01
25	.748E-01	.486E-01	.102E+01
26	.537E-01	.349E-01	.733E+00
27	.526E-01	.341E-01	.717E+00
28	.588E-01	.382E-01	.802E+00
29	.572E-01	.371E-01	.780E+00
30	.526E-01	.341E-01	.717E+00

HEADWATER NO. 17  
NEWELL CREEK

DRAINAGE AREA	TIME	FLOW	FLOW	RUNOFF
STEP	(CFS)	(MGD)	(MGD)	(IN/YR)
1	.902E+01	.585E+01	.150E+02	
2	.198E+01	.128E+01	.329E+01	
3	.108E+01	.699E+00	.179E+01	
4	.103E+01	.671E+00	.172E+01	
5	.805E+00	.523E+00	.134E+01	
6	.703E+00	.457E+00	.117E+01	
7	.190E+01	.123E+01	.316E+01	
8	.721E+00	.468E+00	.120E+01	
9	.805E+00	.523E+00	.134E+01	
10	.890E+00	.578E+00	.148E+01	
11	.105E+01	.679E+00	.174E+01	
12	.123E+01	.796E+00	.204E+01	
13	.121E+01	.785E+00	.201E+01	
14	.697E+00	.453E+00	.116E+01	
15	.613E+00	.398E+00	.102E+01	
16	.535E+00	.347E+00	.890E+00	
17	.447E+00	.290E+00	.743E+00	
18	.338E+00	.219E+00	.562E+00	
19	.496E+00	.322E+00	.825E+00	
20	.447E+00	.290E+00	.743E+00	
21	.667E+00	.433E+00	.111E+01	
22	.823E+00	.535E+00	.137E+01	
23	.525E+00	.341E+00	.873E+00	
24	.697E+00	.453E+00	.116E+01	
25	.613E+00	.398E+00	.102E+01	
26	.441E+00	.286E+00	.733E+00	
27	.431E+00	.280E+00	.717E+00	
28	.482E+00	.313E+00	.802E+00	
29	.469E+00	.304E+00	.780E+00	
30	.431E+00	.280E+00	.717E+00	



HEADWATER NO. 18  
KINGS CREEK

DRAINAGE AREA	TIME	FLOW	FLOW	RUNOFF
STEP	(CFS)	(MGD)	(MGD)	(IN/YR)
1	.146E+02	.950E+01	.285E+02	
2	.616E+01	.400E+01	.120E+02	
3	.300E+01	.195E+01	.585E+01	
4	.131E+01	.853E+00	.256E+01	
5	.836E+00	.543E+00	.163E+01	
6	.677E+00	.440E+00	.132E+01	
7	.189E+01	.123E+01	.368E+01	
8	.118E+01	.766E+00	.230E+01	
9	.102E+01	.660E+00	.198E+01	
10	.100E+01	.650E+00	.195E+01	
11	.118E+01	.766E+00	.230E+01	
12	.171E+01	.111E+01	.334E+01	
13	.142E+01	.923E+00	.277E+01	
14	.667E+00	.433E+00	.130E+01	
15	.482E+00	.313E+00	.940E+00	
16	.149E+00	.966E-01	.290E+00	
17	.303E+00	.197E+00	.590E+00	
18	.334E+00	.217E+00	.650E+00	
19	.564E+00	.237E+00	.710E+00	
20	.657E+00	.426E+00	.126E+01	
21	.107E+01	.693E+00	.208E+01	
22	.153E+01	.996E+00	.299E+01	
23	.831E+00	.540E+00	.162E+01	
24	.134E+01	.873E+00	.262E+01	
25	.513E+00	.333E+00	.100E+01	
26	.523E+00	.340E+00	.102E+01	
27	.180E+00	.117E+00	.350E+00	
28	.513E-01	.333E-01	.100E+00	
29	.103E-01	.666E-02	.200E-01	
30	.230E+01	.149E+01	.448E+01	

HEADWATER NO. 19  
BALDWIN CREEK

DRAINAGE AREA	TIME	FLUX	FLOW	RUNOFF
STEP	(CFS)	(MGD)	(IN/YR)	.200E+01 SQ. MILES
1	.545E+01	.354E+01	.572E+02	
2	.340E+01	.221E+01	.232E+02	
3	.216E+01	.140E+01	.147E+02	
4	.128E+01	.828E+00	.870E+01	
5	.102E+01	.664E+00	.698E+01	
6	.866E+00	.563E+00	.591E+01	
7	.899E+00	.584E+00	.613E+01	
8	.639E+00	.415E+00	.436E+01	
9	.522E+00	.339E+00	.356E+01	
10	.529E+00	.344E+00	.361E+01	
11	.501E+00	.326E+00	.342E+01	
12	.736E+00	.478E+00	.502E+01	
13	.605E+00	.393E+00	.413E+01	
14	.339E+00	.220E+00	.231E+01	
15	.254E+00	.165E+00	.173E+01	
16	.235E+00	.152E+00	.160E+01	
17	.208E+00	.135E+00	.142E+01	
18	.195E+00	.127E+00	.133E+01	
19	.191E+00	.124E+00	.130E+01	
20	.345E+00	.224E+00	.235E+01	
21	.560E+00	.364E+00	.382E+01	
22	.806E+00	.524E+00	.550E+01	
23	.435E+00	.283E+00	.297E+01	
24	.711E+00	.462E+00	.485E+01	
25	.217E+00	.141E+00	.148E+01	
26	.276E+00	.179E+00	.188E+01	
27	.953E-01	.619E-01	.650E+00	
28	.286E-01	.186E-01	.195E+00	
29	.630E-02	.409E-02	.430E-01	
30	.121E+01	.783E+00	.823E+01	

HEADWATER NO. 26  
BOULDER CREEK

DRAINAGE AREA TIME STEP	FLOW (CFS)	FLOW (MGD)	.750E+01 SQ. MILES RUNOFF (IN/YR)
1	.157E+02	.102E+02	.285E+02
2	.660E+01	.428E+01	.120E+02
3	.322E+01	.209E+01	.585E+01
4	.141E+01	.914E+00	.256E+01
5	.896E+00	.582E+00	.163E+01
6	.726E+00	.471E+00	.132E+01
7	.202E+01	.131E+01	.368E+01
8	.126E+01	.821E+00	.230E+01
9	.109E+01	.707E+00	.198E+01
10	.107E+01	.696E+00	.195E+01
11	.126E+01	.821E+00	.230E+01
12	.184E+01	.119E+01	.334E+01
13	.152E+01	.989E+00	.277E+01
14	.715E+00	.464E+00	.130E+01
15	.517E+00	.336E+00	.940E+00
16	.159E+00	.104E+00	.290E+00
17	.324E+00	.211E+00	.590E+00
18	.357E+00	.232E+00	.650E+00
19	.390E+00	.253E+00	.710E+00
20	.704E+00	.457E+00	.128E+01
21	.114E+01	.743E+00	.208E+01
22	.164E+01	.107E+01	.299E+01
23	.891E+00	.578E+00	.162E+01
24	.144E+01	.935E+00	.262E+01
25	.550E+00	.357E+00	.100E+01
26	.561E+00	.364E+00	.102E+01
27	.192E+00	.125E+00	.350E+00
28	.550E-01	.357E-01	.100E+00
29	.110E-01	.714E-02	.200E-01
30	.246E+01	.160E+01	.448E+01



HEADWATER NO. 27  
BEAR CREEK

DRAINAGE AREA TIME FLOW STEP (CFS) (MGD) RUNOFF (IN/YR)	.117E+02 SQ. MILES
1 .244E+02 .159E+02 .285E+02	
2 .103E+02 .668E+01 .120E+02	
3 .502E+01 .326E+01 .585E+01	
4 .220E+01 .143E+01 .256E+01	
5 .140E+01 .908E+00 .163E+01	
6 .113E+01 .735E+00 .132E+01	
7 .316E+01 .205E+01 .368E+01	
8 .197E+01 .128E+01 .230E+01	
9 .170E+01 .110E+01 .198E+01	
10 .167E+01 .109E+01 .195E+01	
11 .197E+01 .128E+01 .230E+01	
12 .286E+01 .186E+01 .334E+01	
13 .238E+01 .154E+01 .277E+01	
14 .111E+01 .724E+00 .130E+01	
15 .806E+00 .524E+00 .940E+00	
16 .249E+00 .162E+00 .290E+00	
17 .506E+00 .329E+00 .590E+00	
18 .557E+00 .362E+00 .650E+00	
19 .609E+00 .395E+00 .710E+00	
20 .110E+01 .713E+00 .128E+01	
21 .178E+01 .116E+01 .208E+01	
22 .256E+01 .167E+01 .299E+01	
23 .139E+01 .902E+00 .162E+01	
24 .225E+01 .145E+01 .262E+01	
25 .858E+00 .557E+00 .100E+01	
26 .875E+00 .568E+00 .102E+01	
27 .300E+00 .195E+00 .350E+00	
28 .858E-01 .557E-01 .100E+00	
29 .172E-01 .111E-01 .200E-01	
30 .384E+01 .250E+01 .448E+01	

APPENDIX F: DESIGN AND COST PARAMETERS  
FOR SANTA CRUZ COUNTY

1. This appendix contains the design and cost estimates for facilities required for Santa Cruz County. Each facility has two pages of information. The first consists of the design parameters and cost summary; the second consists of a breakdown of the costs according to individual components of the facility for various construction years. These values were used in preparing Appendix E.

2. Design values for reservoirs are given first, followed by water treatment plants, wellfields, pump stations, and transmission lines.



RESERVOIR NO. 1  
 TITLE WADDELL A-LOWER  
 AREA .128E+03 ACRES  
 INITIAL POOL ELEVATION .225E+03 FEET  
 MAXIMUM POOL HEIGHT .225E+03 FEET  
 MINIMUM POOL HEIGHT 0 FEET  
 RELEASE .210E+01 MGD

ECONOMIC FACTORS  
 YEAR CONSTRUCTED 1980 YEAR  
 DESIGN LIFE 50 YEARS  
 INTEREST RATE .663E+01 PERCENT  
 ENR CONSTRUCTION INDEX .268E+04  
 CITY MULTIPLIER .114E+01

# COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O % INFLATION
CONSTRUCTION(\$)	.210E+08	.184E+08	.210E+08
OVERHEAD(\$)	.210E+07	.184E+07	.210E+07
CAPITAL COST(\$)	.231E+08	.203E+08	.231E+08
AMORTIZED(\$/YR)	.159E+07	.140E+07	.159E+07
LABOR(MAN-HR/YR) 0.	0.	0.	0.
LABOR COST(\$/YR) 0.	0.	0.	0.
SUPPLY COST(\$/YR)	.150E+05	.132E+05	.150E+05
POWER(\$/YR) 0.	0.	0.	0.
TOTAL O&M(\$/YR)	.150E+05	.132E+05	.150E+05
AVE ANNUAL(\$/YR)	.161E+07	.141E+07	.183E+07

SUPPLY COST OVERRIDE .150E+05  
 PERCENT DEPRECIATED 0.

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Waddell Creek Reservoir - Site A  
 (continued)

1978 WORTH OF 1980 PLANT COST 20318605.  
 1978 WORTH OF 2020 PLANT SALVAGE 312293.  
 1978 WORTH OF LAND USE FROM 1980 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS 183848.  
 1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS 20190161.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 1434569.

1978 WORTH OF 1990 PLANT COST 10698022.  
 1978 WORTH OF 2020 PLANT SALVAGE 624586.  
 1978 WORTH OF LAND USE FROM 1990 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS 89552.  
 1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS 10162988.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 722110.

1978 WORTH OF 2000 PLANT COST 5632654.  
 1978 WORTH OF 2020 PLANT SALVAGE 936879.  
 1978 WORTH OF LAND USE FROM 2000 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS 39904.  
 1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS 4735679.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 336484.

1978 WORTH OF 2010 PLANT COST 2965669.  
 1978 WORTH OF 2020 PLANT SALVAGE 1249172.  
 1978 WORTH OF LAND USE FROM 2010 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS 13763.  
 1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS 1730261.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 122940.

Waddell Creek Reservoir - Site A  
 (concluded)

RESERVOIR NO. 3  
 TITLE SCOTT A&B LOWER  
 AREA  
 INITIAL POOL ELEVATION  
 MAXIMUM POOL HEIGHT  
 MINIMUM POOL HEIGHT  
 RELEASE

.205E+03 ACRES  
 .160E+03 FEET  
 .160E+03 FEET  
 0 FEET  
 .210E+01 MGD

ECONOMIC FACTORS  
 YEAR CONSTRUCTED  
 DESIGN LIFE  
 INTEREST RATE  
 ENR CONSTRUCTION INDEX  
 CITY MULTIPLIER

1980 YEAR  
 50 YEARS  
 .663E+01 PERCENT  
 .268E+04  
 .114E+01

COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O. % INFLATION
CONSTRUCTION(\$)	.234E+08	.206E+08	.234E+08
OVERHEAD(\$)	.234E+07	.206E+07	.234E+07
CAPITAL COST(\$)	.257E+08	.226E+08	.257E+08
AMORTIZED(\$/YR)	.178E+07	.156E+07	.178E+07
LABOR(MAN-HR/YR)	0	0	0
LABOR COST(\$/YR)	0	0	0
SUPPLY COST(\$/YR)	.150E+05	.132E+05	.150E+05
POWER(\$/YR)	0	0	0
TOTAL O&M(\$/YR)	.150E+05	.132E+05	.150E+05
AVE ANNUAL(\$/YR)	.179E+07	.158E+07	.204E+07
SUPPLY COST OVERRIDE			.150E+05
PERCENT DEPRECIATED		0.	

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Scott Creek Reservoir - Site A  
 (continued)



1978 WORTH OF 1980 PLANT COST 22640732.  
 1978 WORTH OF 2020 PLANT SALVAGE 347984.  
 1978 WORTH OF LAND USE FROM 1980 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS 183848.  
 1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS 22476596.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 1597027.

1978 WORTH OF 1990 PLANT COST 11920653.  
 1978 WORTH OF 2020 PLANT SALVAGE 695967.  
 1978 WORTH OF LAND USE FROM 1990 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS 89552.  
 1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS 11314238.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 803909.

1978 WORTH OF 2000 PLANT COST 6276386.  
 1978 WORTH OF 2020 PLANT SALVAGE 1043951.  
 1978 WORTH OF LAND USE FROM 2000 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS 39904.  
 1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS 5272339.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 374615.

1978 WORTH OF 2010 PLANT COST 3304603.  
 1978 WORTH OF 2020 PLANT SALVAGE 1391935.  
 1978 WORTH OF LAND USE FROM 2010 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS 13763.  
 1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS 1926432.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 136879.

Scott Creek Reservoir - Site A  
 (concluded)

RESERVOIR NO. 6

TITLE ZAYANTE

AREA

INITIAL POOL ELEVATION

MAXIMUM POOL HEIGHT

MINIMUM POOL HEIGHT

RELEASE

.129E+03 ACRES  
.200E+03 FEET  
.200E+03 FEET  
0. FEET  
.210E+01 MGD

ECONOMIC FACTORS

YEAR CONSTRUCTED

DESIGN LIFE

INTEREST RATE

ENR CONSTRUCTION INDEX

CITY MULTIPLIER

1980 YEAR  
50 YEARS  
.663E+01 PERCENT  
.268E+04  
.114E+01

COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O % INFLATION
CONSTRUCTION(\$)	.191E+08	.168E+08	.191E+08
OVERHEAD(\$)	.191E+07	.168E+07	.191E+07
CAPITAL COST(\$)	.210E+08	.185E+08	.210E+08
AMORTIZED(\$/YR)	.145E+07	.128E+07	.145E+07
LABOR(MAN-HR/YR) 0.	0.	0.	0.
LABOR COST(\$/YR) 0.	0.	0.	0.
SUPPLY COST(\$/YR)	.150E+05	.132E+05	.150E+05
POWER(\$/YR) 0.	0.	0.	0.
TOTAL O&M(\$/YR)	.150E+05	.132E+05	.150E+05
AVE ANNUAL(\$/YR)	.147E+07	.129E+07	.167E+07

SUPPLY COST OVERRIDE

PERCENT DEPRECIATED

0.

.150E+05

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Zayante Creek Reservoir  
(continued)

1978 WORTH OF 1980 PLANT COST 18480255.  
 1978 WORTH OF 2020 PLANT SALVAGE 284038.  
 1978 WORTH OF LAND USE FROM 1980 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS 183848.  
 1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS 18380066.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 1305957.

1978 WORTH OF 1990 PLANT COST 9730106.  
 1978 WORTH OF 2020 PLANT SALVAGE 568076.  
 1978 WORTH OF LAND USE FROM 1990 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS 89552.  
 1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS 9251582.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 657352.

1978 WORTH OF 2000 PLANT COST 5123033.  
 1978 WORTH OF 2020 PLANT SALVAGE 852114.  
 1978 WORTH OF LAND USE FROM 2000 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS 39904.  
 1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS 4310823.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 306296.

1978 WORTH OF 2010 PLANT COST 2697347.  
 1978 WORTH OF 2020 PLANT SALVAGE 1136152.  
 1978 WORTH OF LAND USE FROM 2010 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS 13763.  
 1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS 1574959.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 111905.

Zayante Creek Reservoir  
 (concluded)



RESERVOIR NO. 7  
 TITLE WATERMAN SWITCH  
 AREA  
 INITIAL POOL ELEVATION  
 MAXIMUM POOL HEIGHT  
 MINIMUM POOL HEIGHT  
 RELEASE

.510E+02 ACRES  
 .150E+03 FEET  
 .150E+03 FEET  
 0. FEET  
 .210E+01 MGD

ECONOMIC FACTORS  
 YEAR CONSTRUCTED  
 DESIGN LIFE  
 INTEREST RATE  
 ENR CONSTRUCTION INDEX  
 CITY MULTIPLIER

1980 YEAR  
 50 YEARS  
 .665E+01 PERCENT  
 .268E+04  
 .114E+01

COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 w/o. % INFLATION
CONSTRUCTION(\$)	.688E+07	.606E+07	.688E+07
OVERHEAD(\$)	.688E+06	.606E+06	.688E+06
CAPITAL COST(\$)	.757E+07	.666E+07	.757E+07
AMORTIZED(\$/YR)	.523E+06	.460E+06	.523E+06
LABOR(MAN-HR/YR)	0.	0.	0.
LABOR COST(\$/YR)	0.	0.	0.
SUPPLY COST(\$/YR)	.150E+05	.132E+05	.150E+05
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.150E+05	.132E+05	.150E+05
AVE ANNUAL(\$/YR)	.538E+06	.473E+06	.612E+06

SUPPLY COST OVERRIDE  
 PERCENT DEPRECIATED

0.

.150E+05

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Waterman Switch Reservoir  
 (continued)

1978 WORTH OF 1980 PLANT COST 6656762.  
 1978 WORTH OF 2020 PLANT SALVAGE 102313.  
 1978 WORTH OF LAND USE FROM 1980 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS 183848.  
 1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS 6738297.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 478775.

1978 WORTH OF 1990 PLANT COST 3504876.  
 1978 WORTH OF 2020 PLANT SALVAGE 204626.  
 1978 WORTH OF LAND USE FROM 1990 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS 89552.  
 1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS 3389802.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 240855.

1978 WORTH OF 2000 PLANT COST 1845365.  
 1978 WORTH OF 2020 PLANT SALVAGE 306939.  
 1978 WORTH OF LAND USE FROM 2000 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS 39904.  
 1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS 1578329.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 112145.

1978 WORTH OF 2010 PLANT COST 971610.  
 1978 WORTH OF 2020 PLANT SALVAGE 409253.  
 1978 WORTH OF LAND USE FROM 2010 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS 13763.  
 1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS 576121.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 40935.

Waterman Switch Reservoir  
 (concluded)



RESERVOIR NO. 8  
 TITLE GLENWOOD SITE A  
 AREA  
 INITIAL POOL ELEVATION  
 MAXIMUM POOL HEIGHT  
 MINIMUM POOL HEIGHT  
 RELEASE

.740E+02 ACRES  
 .160E+03 FEET  
 .160E+03 FEET  
 0. FEET  
 .210E+01 MGD

ECONOMIC FACTORS  
 YEAR CONSTRUCTED  
 DESIGN LIFE  
 INTEREST RATE  
 ENR CONSTRUCTION INDEX  
 CITY MULTIPLIER

1980 YEAR  
 50 YEARS  
 .663E+01 PERCENT  
 .268E+04  
 .114E+01

# COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O. % INFLATION
CONSTRUCTION(\$)	.994E+07	.874E+07	.994E+07
OVERHEAD(\$)	.994E+06	.874E+06	.994E+06
CAPITAL COST(\$)	.109E+08	.961E+07	.109E+08
AMORTIZED(\$/YR)	.755E+06	.664E+06	.755E+06
LABOR(MAN-HR/YR)	0.	0.	0.
LABOR COST(\$/YR)	0.	0.	0.
SUPPLY COST(\$/YR)	.150E+05	.132E+05	.150E+05
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.150E+05	.132E+05	.150E+05
AVE ANNUAL(\$/YR)	.770E+06	.677E+06	.875E+06

SUPPLY COST OVERRIDE .150E+05  
 PERCENT DEPRECIATED 0.

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Glenwood Reservoir  
 (continued)

1978 WORTH OF 1980 PLANT COST 9617473.  
 1978 WORTH OF 2020 PLANT SALVAGE 147819.  
 1978 WORTH OF LAND USE FROM 1980 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS 183848.  
 1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS 9653503.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 685409.

1978 WORTH OF 1990 PLANT COST 5063731.  
 1978 WORTH OF 2020 PLANT SALVAGE 295637.  
 1978 WORTH OF LAND USE FROM 1990 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS 89552.  
 1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS 4857645.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 345150.

1978 WORTH OF 2000 PLANT COST 2666123.  
 1978 WORTH OF 2020 PLANT SALVAGE 443456.  
 1978 WORTH OF LAND USE FROM 2000 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS 39904.  
 1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS 2262571.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 160762.

1978 WORTH OF 2010 PLANT COST 1403750.  
 1978 WORTH OF 2020 PLANT SALVAGE 591275.  
 1978 WORTH OF LAND USE FROM 2010 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS 13763.  
 1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS 826239.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 58707.

Glenwood Reservoir  
 (concluded)

RESERVOIR NO. 9  
 TITLE UPPER SOQUEL SITE B  
 AREA  
 INITIAL POOL ELEVATION  
 MAXIMUM POOL HEIGHT  
 MINIMUM POOL HEIGHT  
 RELEASE

.850E+02 ACRES  
 .240E+03 FEET  
 .240E+03 FEET  
 0. FEET  
 .210E+01 MGD

ECONOMIC FACTORS  
 YEAR CONSTRUCTED  
 DESIGN LIFE  
 INTEREST RATE  
 ENR CONSTRUCTION INDEX  
 CITY MULTIPLIER

1980 YEAR  
 50 YEARS  
 .663E+01 PERCENT  
 .268E+04  
 .114E+01

# COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O. % INFLATION
CONSTRUCTION(\$)	.157E+08	.138E+08	.157E+08
OVERHEAD(\$)	.157E+07	.138E+07	.157E+07
CAPITAL COST(\$)	.173E+08	.152E+08	.173E+08
AMORTIZED(\$/YR)	.119E+07	.105E+07	.119E+07
LABOR(MAN-HR/YR) 0.	0.	0.	0.
LABOR COST(\$/YR) 0.	0.	0.	0.
SUPPLY COST(\$/YR)	.150E+05	.132E+05	.150E+05
POWER(\$/YR) 0.	0.	0.	0.
TOTAL O&M(\$/YR)	.150E+05	.132E+05	.150E+05
AVE ANNUAL(\$/YR)	.121E+07	.106E+07	.137E+07
			.150E+05

SUPPLY COST OVERRIDE  
 PERCENT DEPRECIATED

0.

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Upper Soquel Reservoir - Site B  
 (continued)



1978 WORTH OF	1980 PLANT COST	15190576.	
1978 WORTH OF	2020 PLANT SALVAGE	233476.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		183848.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	15140949.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 1075808.

1978 WORTH OF	1990 PLANT COST	7998045.	
1978 WORTH OF	2020 PLANT SALVAGE	466952.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		89552.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	7620645.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 541469.

1978 WORTH OF	2000 PLANT COST	4211080.	
1978 WORTH OF	2020 PLANT SALVAGE	700429.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		39904.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	3550555.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 252277.

1978 WORTH OF	2010 PLANT COST	2217191.	
1978 WORTH OF	2020 PLANT SALVAGE	933905.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		13763.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	1297049.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 92159.

Upper Soquel Reservoir - Site B  
(concluded)

RESERVOIR NO. 10

TITLE APTOS

AREA

INITIAL POOL ELEVATION

MAXIMUM POOL HEIGHT

MINIMUM POOL HEIGHT

RELEASE

.610E+02 ACRES  
.147E+03 FEET  
.147E+03 FEET  
0. FEET  
.210E+01 MGD

ECONOMIC FACTORS

YEAR CONSTRUCTED

DESIGN LIFE

INTEREST RATE

ENR CONSTRUCTION INDEX

CITY MULTIPLIER

1980 YEAR  
50 YEARS  
.663E+01 PERCENT  
.268E+04  
.114E+01

COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O. % INFLATION
CONSTRUCTION(\$)	.787E+07	.692E+07	.787E+07
OVERHEAD(\$)	.787E+06	.692E+06	.787E+06
CAPITAL COST(\$)	.865E+07	.761E+07	.865E+07
AMORTIZED(\$/YR)	.598E+06	.526E+06	.598E+06
LABOR(MAN-HR/YR) 0.	0.	0.	0.
LABOR COST(\$/YR) 0.	0.	0.	0.
SUPPLY COST(\$/YR)	.150E+05	.132E+05	.150E+05
POWER(\$/YR) 0.	0.	0.	0.
TOTAL O&M(\$/YR)	.150E+05	.132E+05	.150E+05
AVE ANNUAL(\$/YR)	.613E+06	.539E+06	.696E+06

SUPPLY COST OVERRIDE

PERCENT DEPRECIATED

0.

.150E+05

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Aptos Creek Reservoir  
(continued)

1978 WORTH OF 1980 PLANT COST 7614639.  
 1978 WORTH OF 2020 PLANT SALVAGE 117036.  
 1978 WORTH OF LAND USE FROM 1980 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS 183848.  
 1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS 7681452.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 545789.

1978 WORTH OF 1990 PLANT COST 4009211.  
 1978 WORTH OF 2020 PLANT SALVAGE 234071.  
 1978 WORTH OF LAND USE FROM 1990 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS 89552.  
 1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS 3864692.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 274598.

1978 WORTH OF 2000 PLANT COST 2110904.  
 1978 WORTH OF 2020 PLANT SALVAGE 351107.  
 1978 WORTH OF LAND USE FROM 2000 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS 39904.  
 1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS 1799702.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 127874.

1978 WORTH OF 2010 PLANT COST 1111420.  
 1978 WORTH OF 2020 PLANT SALVAGE 468142.  
 1978 WORTH OF LAND USE FROM 2010 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS 13763.  
 1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS 657041.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 46685.

Aptos Creek Reservoir  
(concluded)



RESERVOIR NO. 11  
TITLE PESCADERO

AREA .110E+03 ACRES  
INITIAL POOL ELEVATION .110E+03 FEET  
MAXIMUM POOL HEIGHT .110E+03 FEET  
MINIMUM POOL HEIGHT 0. FEET  
RELEASE .210E+01 MGD

ECONOMIC FACTORS

YEAR CONSTRUCTED 1980 YEAR  
DESIGN LIFE 50 YEARS  
INTEREST RATE .663E+01 PERCENT  
ENR CONSTRUCTION INDEX .268E+04  
CITY MULTIPLIER .114E+01

COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O % INFLATION
CONSTRUCTION(\$)	.101E+08	.890E+07	.101E+08
OVERHEAD(\$)	.101E+07	.890E+06	.101E+07
CAPITAL COST(\$)	.111E+08	.979E+07	.111E+08
AMORTIZED(\$/YR)	.769E+06	.676E+06	.769E+06
LABOR(MAN-HR/YR) 0.	0.	0.	0.
LABOR COST(\$/YR) 0.	0.	0.	0.
SUPPLY COST(\$/YR)	.150E+05	.132E+05	.150E+05
POWER(\$/YR) 0.	0.	0.	0.
TOTAL O&M(\$/YR)	.150E+05	.132E+05	.150E+05
AVE ANNUAL(\$/YR)	.784E+06	.689E+06	.891E+06
SUPPLY COST OVERRIDE			.150E+05
PERCENT DEPRECIATED		0.	

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Pescadero Creek Reservoir without pumping from Pajaro River  
(continued)

1978 WORTH OF 1980 PLANT COST	9772282.	
1978 WORTH OF 2020 PLANT SALVAGE	150198.	
1978 WORTH OF LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS	9805932.	183848.
1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 696740.		

1978 WORTH OF 1990 PLANT COST	5145239.	
1978 WORTH OF 2020 PLANT SALVAGE	300396.	
1978 WORTH OF LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS	4934395.	89552.
1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 350603.		

1978 WORTH OF 2000 PLANT COST	2709039.	
1978 WORTH OF 2020 PLANT SALVAGE	450594.	
1978 WORTH OF LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS	2298348.	39904.
1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 163304.		

1978 WORTH OF 2010 PLANT COST	1426346.	
1978 WORTH OF 2020 PLANT SALVAGE	600792.	
1978 WORTH OF LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS	839317.	13763.
1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 59636.		

Pescadero Creek Reservoir without pumping from Pajaro River  
(concluded)

1978 WORTH OF	1980 PLANT COST	9772282.	
1978 WORTH OF	2020 PLANT SALVAGE	150196.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS	0.	183848.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	9805932.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 696740.

1978 WORTH OF	1990 PLANT COST	5145239.	
1978 WORTH OF	2020 PLANT SALVAGE	300396.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS	0.	89552.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	4934395.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 350603.

1978 WORTH OF	2000 PLANT COST	2709039.	
1978 WORTH OF	2020 PLANT SALVAGE	450594.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS	0.	39904.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	2298348.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 163304.

1978 WORTH OF	2010 PLANT COST	1426346.	
1978 WORTH OF	2020 PLANT SALVAGE	600792.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS	0.	13763.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	839317.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 59636.

Pescadero Creek Reservoir without pumping from Pajaro River  
(concluded)



RESERVOIR NO. 11

TITLE PESCADERO

AREA

.230E+03 ACRES

INITIAL POOL ELEVATION

.110E+03 FEET

MAXIMUM POOL HEIGHT

.110E+03 FEET

MINIMUM POOL HEIGHT

0. FEET

RELEASE

.210E+01 MGD

ECONOMIC FACTORS

YEAR CONSTRUCTED

1980

YEAR

DESIGN LIFE

50 YEARS

INTEREST RATE

.663E+01 PERCENT

ENR CONSTRUCTION INDEX

.268E+04

CITY MULTIPLIER

.114E+01

COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 w/o % INFLATION
CONSTRUCTION(\$)	.188E+08	.165E+08	.188E+08
OVERHEAD(\$)	.188E+07	.165E+07	.188E+07
CAPITAL COST(\$)	.207E+08	.182E+08	.207E+08
AMORTIZED(\$/YR)	.143E+07	.126E+07	.143E+07
LABOR(MAN-HR/YR)	0.	0.	0.
LABOR COST(\$/YR)	0.	0.	0.
SUPPLY COST(\$/YR)	.150E+05	.132E+05	.150E+05
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.150E+05	.132E+05	.150E+05
AVE ANNUAL(\$/YR)	.144E+07	.127E+07	.164E+07

SUPPLY COST OVERRIDE

.150E+05

PERCENT DEPRECIATED

0.

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Pescadero Creek Reservoir with pumping from Pajaro River  
(continued)

1978 WORTH OF 1980 PLANT COST 18189989.  
 1978 WORTH OF 2020 PLANT SALVAGE 279577.  
 1978 WORTH OF LAND USE FROM 1980 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS 183848.  
 1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS 18094261.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 1285649.

1978 WORTH OF 1990 PLANT COST 9577277.  
 1978 WORTH OF 2020 PLANT SALVAGE 559153.  
 1978 WORTH OF LAND USE FROM 1990 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS 89552.  
 1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS 9107676.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 647127.

1978 WORTH OF 2000 PLANT COST 5042567.  
 1978 WORTH OF 2020 PLANT SALVAGE 838730.  
 1978 WORTH OF LAND USE FROM 2000 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS 39904.  
 1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS 4243741.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 301530.

1978 WORTH OF 2010 PLANT COST 2654980.  
 1978 WORTH OF 2020 PLANT SALVAGE 1118307.  
 1978 WORTH OF LAND USE FROM 2010 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS 13763.  
 1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS 1550437.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 110163.

Pescadero Creek with pumping from Pajaro River  
 (concluded)

RESERVOIR NO. 12  
 TITLE CORNCOB CANYON  
 AREA  
 INITIAL POOL ELEVATION  
 MAXIMUM POOL HEIGHT  
 MINIMUM POOL HEIGHT  
 RELEASE

.940E+02 ACRES  
 .150E+03 FEET  
 .150E+03 FEET  
 0 FEET  
 .210E+01 MGD

ECONOMIC FACTORS  
 YEAR CONSTRUCTED  
 DESIGN LIFE  
 INTEREST RATE  
 ENR CONSTRUCTION INDEX  
 CITY MULTIPLIER

1980 YEAR  
 50 YEARS  
 .063E+01 PERCENT  
 .268E+04  
 .114E+01

# COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O. % INFLATION
CONSTRUCTION(\$)	.115E+08	.101E+08	.115E+08
OVERHEAD(\$)	.115E+07	.101E+07	.115E+07
CAPITAL COST(\$)	.127E+08	.111E+08	.127E+08
AMORTIZED(\$/YR)	.874E+06	.769E+06	.874E+06
LABOR(MAN-HR/YR)	0	0	0
LABOR COST(\$/YR)	0	0	0
SUPPLY COST(\$/YR)	.150E+05	.132E+05	.150E+05
POWER(\$/YR)	0	0	0
TOTAL O&M(\$/YR)	.150E+05	.132E+05	.150E+05
AVE ANNUAL(\$/YR)	.889E+06	.782E+06	.101E+07
SUPPLY COST OVERRIDE			.150E+05
PERCENT DEPRECIATED		0.	

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Corncob Canyon Reservoir  
 (continued)



1978 WORTH OF 1980 PLANT COST 11126855.  
 1978 WORTH OF 2020 PLANT SALVAGE 171018.  
 1978 WORTH OF LAND USE FROM 1980 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS 183848.  
 1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS 11139686.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 791507.

1978 WORTH OF 1990 PLANT COST 5858441.  
 1978 WORTH OF 2020 PLANT SALVAGE 342035.  
 1978 WORTH OF LAND USE FROM 1990 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS 89552.  
 1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS 5605958.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 398319.

1978 WORTH OF 2000 PLANT COST 3084549.  
 1978 WORTH OF 2020 PLANT SALVAGE 513053.  
 1978 WORTH OF LAND USE FROM 2000 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS 39904.  
 1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS 2611400.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 185547.

1978 WORTH OF 2010 PLANT COST 1624057.  
 1978 WORTH OF 2020 PLANT SALVAGE 684070.  
 1978 WORTH OF LAND USE FROM 2010 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS 13763.  
 1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS 953750.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 67767.

Corncob Canyon Reservoir  
 (concluded)

RESERVOIR NO. 13  
 TITLE KING SITE B  
 AREA  
 INITIAL POOL ELEVATION  
 MAXIMUM POOL HEIGHT  
 MINIMUM POOL HEIGHT  
 RELEASE

.500E+02 ACRES  
 .160E+03 FEET  
 .160E+03 FEET  
 0. FEET  
 .210E+01 MGD

ECONOMIC FACTORS  
 YEAR CONSTRUCTED  
 DESIGN LIFE  
 INTEREST RATE  
 ENR CONSTRUCTION INDEX  
 CITY MULTIPLIER

1980 YEAR  
 50 YEARS  
 .663E+01 PERCENT  
 .268E+04  
 .114E+01

#### COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 w/o. % INFLATION
CONSTRUCTION(\$)	.715E+07	.629E+07	.715E+07
OVERHEAD(\$)	.715E+06	.629E+06	.715E+06
CAPITAL COST(\$)	.786E+07	.692E+07	.786E+07
AMORTIZED(\$/YR)	.543E+06	.478E+06	.543E+06
LABOR(MAN-HR/YR) 0.	0.	0.	0.
LABOR COST(\$/YR) 0.	0.	0.	0.
SUPPLY COST(\$/YR)	.150E+05	.132E+05	.150E+05
POWER(\$/YR) 0.	0.	0.	0.
TOTAL O&M(\$/YR)	.150E+05	.132E+05	.150E+05
AVE. ANNUAL(\$/YR)	.558E+06	.491E+06	.634E+06
SUPPLY COST OVERRIDE			.150E+05

PERCENT DEPRECIATED

0.

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Kings Creek Reservoir - Site B  
 (continued)

1978 WORTH OF 1980 PLANT COST 6918001.  
 1978 WORTH OF 2020 PLANT SALVAGE 106328.  
 1978 WORTH OF LAND USE FROM 1980 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS 183848.  
 1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS 6995521.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 497052.

1978 WORTH OF 1990 PLANT COST 3642422.  
 1978 WORTH OF 2020 PLANT SALVAGE 212657.  
 1978 WORTH OF LAND USE FROM 1990 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS 89552.  
 1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS 3519317.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 250058.

1978 WORTH OF 2000 PLANT COST 1917785.  
 1978 WORTH OF 2020 PLANT SALVAGE 318985.  
 1978 WORTH OF LAND USE FROM 2000 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS 39904.  
 1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS 1638704.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 116435.

1978 WORTH OF 2010 PLANT COST 1009740.  
 1978 WORTH OF 2020 PLANT SALVAGE 425313.  
 1978 WORTH OF LAND USE FROM 2010 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS 13763.  
 1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS 598190.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 42503.

Kings Creek Reservoir - Site B  
 (concluded)



RESERVOIR NO. 14  
 TITLE JAMISON DAM(ON BOULDER CR)  
 AREA  
 INITIAL POOL ELEVATION  
 MAXIMUM POOL HEIGHT  
 MINIMUM POOL HEIGHT  
 RELEASE

.150E+03 ACRES  
 .680E+02 FEET  
 .120E+03 FEET  
 0. FEET  
 .210E+01 MGD

ECONOMIC FACTORS  
 YEAR CONSTRUCTED  
 DESIGN LIFE  
 INTEREST RATE  
 ENR CONSTRUCTION INDEX  
 CITY MULTIPLIER

1980 YEAR  
 50 YEARS  
 .663E+01 PERCENT  
 .268E+04  
 .114E+01

# COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O % INFLATION
CONSTRUCTION(\$)	.141E+08	.124E+08	.141E+08
OVERHEAD(\$)	.141E+07	.124E+07	.141E+07
CAPITAL COST(\$)	.155E+08	.137E+08	.155E+08
AMORTIZED(\$/YR)	.107E+07	.944E+06	.107E+07
LABOR(MAN-HR/YR)	0.	0.	0.
LABOR COST(\$/YR)	0.	0.	0.
SUPPLY COST(\$/YR)	.150E+05	.132E+05	.150E+05
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.150E+05	.132E+05	.150E+05
AVE ANNUAL(\$/YR)	.109E+07	.957E+06	.124E+07
SUPPLY COST OVERRIDE			.150E+05
PERCENT DEPRECIATED		0.	

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Boulder Creek Reservoir (Jamison Dam)  
 (continued)

1978 WORTH OF 1980 PLANT COST 13642492.  
 1978 WORTH OF 2020 PLANT SALVAGE 209682.  
 1978 WORTH OF LAND USE FROM 1980 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS 183848.  
 1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS 13616658.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 967503.

1978 WORTH OF 1990 PLANT COST 7182958.  
 1978 WORTH OF 2020 PLANT SALVAGE 419365.  
 1978 WORTH OF LAND USE FROM 1990 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS 89552.  
 1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS 6853145.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 486936.

1978 WORTH OF 2000 PLANT COST 3781925.  
 1978 WORTH OF 2020 PLANT SALVAGE 629047.  
 1978 WORTH OF LAND USE FROM 2000 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS 39904.  
 1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS 3192782.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 226856.

1978 WORTH OF 2010 PLANT COST 1991235.  
 1978 WORTH OF 2020 PLANT SALVAGE 838730.  
 1978 WORTH OF LAND USE FROM 2010 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS 14763.  
 1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS 1166269.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 82867.

Boulder Creek Reservoir (Jamison Dam)  
 (concluded)

RESERVOIR NO. 15

TITLE BEAR CR.

AREA

.925E+02 ACRES

INITIAL POOL ELEVATION

.138E+03 FEET

MAXIMUM POOL HEIGHT

.138E+03 FEET

MINIMUM POOL HEIGHT

0. FEET

RELEASE

.210E+01 MGD

ECONOMIC FACTORS

YEAR CONSTRUCTED

1980

YEAR

DESIGN LIFE

50 YEARS

INTEREST RATE

.663E+01 PERCENT

ENR CONSTRUCTION INDEX

.268E+04

CITY MULTIPLIER

.114E+01

COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O. % INFLATION
CONSTRUCTION(\$)	.106E+08	.931E+07	.106E+08
OVERHEAD(\$)	.106E+07	.931E+06	.106E+07
CAPITAL COST(\$)	.116E+08	.102E+08	.116E+08
AMORTIZED(\$/YR)	.804E+06	.707E+06	.804E+06
LABOR(MAN-HR/YR)	0.	0.	0.
LABOR COST(\$/YR)	0.	0.	0.
SUPPLY COST(\$/YR)	.150E+05	.132E+05	.150E+05
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.150E+05	.132E+05	.150E+05
AVE ANNUAL(\$/YR)	.819E+06	.720E+06	.931E+06
SUPPLY COST OVERRIDE			.150E+05
PERCENT DEPRECIATED		0.	

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Bear Creek Reservoir  
(continued)



1978 WORTH OF	1980 PLANT COST	10256058.	
1978 WORTH OF	2020 PLANT SALVAGE	157634.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		183848.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	10282273.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 730585.

1978 WORTH OF	1990 PLANT COST	5399954.	
1978 WORTH OF	2020 PLANT SALVAGE	315267.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		89552.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	5174239.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 367645.

1978 WORTH OF	2000 PLANT COST	2843149.	
1978 WORTH OF	2020 PLANT SALVAGE	472901.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		39904.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	2410152.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 171248.

1978 WORTH OF	2010 PLANT COST	1496957.	
1978 WORTH OF	2020 PLANT SALVAGE	630535.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		13763.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	880186.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 62540.

Bear Creek Reservoir  
(concluded)

RESERVOIR NO. 16

TITLE BALWIN

AREA

.650E+02 ACRES

INITIAL POOL ELEVATION

.100E+03 FEET

MAXIMUM POOL HEIGHT

.100E+03 FEET

MINIMUM POOL HEIGHT

0. FEET

RELEASE

.210E+01 MGD

ECONOMIC FACTORS

YEAR CONSTRUCTED

1980

YEAR

DESIGN LIFE

50 YEARS

INTEREST RATE

.663E+01 PERCENT

ENR CONSTRUCTION INDEX

.268E+04

CITY MULTIPLIER

.114E+01

COST SUMMARY

	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
			W/O. % INFLATION
CONSTRUCTION(\$)	.600E+07	.528E+07	.600E+07
OVERHEAD(\$)	.600E+06	.528E+06	.600E+06
CAPITAL COST(\$)	.660E+07	.581E+07	.660E+07
AMORTIZED(\$/YR)	.456E+06	.401E+06	.456E+06
LABOR(MAN-HR/YR)	0.	0.	0.
LABOR COST(\$/YR)	0.	0.	0.
SUPPLY COST(\$/YR)	.150E+05	.132E+05	.150E+05
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.150E+05	.132E+05	.150E+05
AVE ANNUAL(\$/YR)	.471E+06	.414E+06	.535E+06
SUPPLY COST OVERRIDE			.150E+05
PERCENT DEPRECIATED		0.	

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Baldwin Creek Reservoir  
(continued)

1978 WORTH OF 1980 PLANT COST 5805316.  
 1978 WORTH OF 2020 PLANT SALVAGE 89227.  
 1978 WORTH OF LAND USE FROM 1980 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS 183848.  
 1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS 5899938.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 419208.

1978 WORTH OF 1990 PLANT COST 3056578.  
 1978 WORTH OF 2020 PLANT SALVAGE 178453.  
 1978 WORTH OF LAND USE FROM 1990 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS 89552.  
 1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS 2967677.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 210862.

1978 WORTH OF 2000 PLANT COST 1609330.  
 1978 WORTH OF 2020 PLANT SALVAGE 267680.  
 1978 WORTH OF LAND USE FROM 2000 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS 39904.  
 1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS 1381554.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 98163.

1978 WORTH OF 2010 PLANT COST 847334.  
 1978 WORTH OF 2020 PLANT SALVAGE 356906.  
 1978 WORTH OF LAND USE FROM 2010 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS 13763.  
 1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS 504191.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 35824.

Baldwin Creek Reservoir  
 (concluded)



# TREATMENT PLANT 2

## UPPER SAN LORENZO WATER TREATMENT PLANT.

### COSTS BASED ON SOLID REMOVAL & CHORINATION

MAXIMUM DESIGN FLOW	.500E+01	MGD
HIGH DAY DESIGN FLOW	.500E+01	MGD
AVERAGE DESIGN FLOW	.500E+01	MGD
MINIMUM DESIGN FLOW	.500E+01	MGD

### ECONOMIC FACTORS

YEAR CONSTRUCTED	1980	YEAR
DESIGN LIFE	20	YEARS
INTEREST RATE	.663E+01	PERCENT
WAGE O&M	.750E+01	\$/HR
ENR CONSTRUCTION INDEX	.268E+04	
CITY MULTIPLIER	.114E+01	

### COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O % INFLATION
CONSTRUCTION(\$)	.234E+07	.206E+07	.234E+07
OVERHEAD(\$)	.234E+06	.206E+06	.234E+06
CAPITAL COST(\$)	.257E+07	.226E+07	.257E+07
AMORTIZED(\$/YR)	.236E+06	.208E+06	.236E+06
LABOR(MAN-HR/YR) 0.	0.	0.	0.
LABOR COST(\$/YR) 0.	0.	0.	0.
SUPPLY COST(\$/YR)	.214E+06	.188E+06	.214E+06
POWER(\$/YR) 0.	0.	0.	0.
TOTAL O&M(\$/YR)	.214E+06	.188E+06	.214E+06
AVE ANNUAL(\$/YR)	.450E+06	.396E+06	.512E+06

PERCENT DEPRECIATED 0.

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Upper San Lorenzo Water Treatment Plant  
(continued)

1978 WORTH OF	1980 PLANT COST	2264073.	
1978 WORTH OF	2000 PLANT COST	627639.	
1978 WORTH OF	2020 PLANT COST	173992.	
1978 WORTH OF	2020 PLANT SALVAGE	173992.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		2622905.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	5514617.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 391829.

1978 WORTH OF	1990 PLANT COST	1192065.	
1978 WORTH OF	2010 PLANT COST	330460.	
1978 WORTH OF	2020 PLANT SALVAGE	86996.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		1277611.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	2713140.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 192776.

1978 WORTH OF	2000 PLANT COST	627639.	
1978 WORTH OF	2020 PLANT COST	173992.	
1978 WORTH OF	2020 PLANT SALVAGE	173992.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		569295.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	1196933.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 85046.

1978 WORTH OF	2010 PLANT COST	330460.	
1978 WORTH OF	2020 PLANT SALVAGE	86996.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		196357.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	439821.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 31251.

Upper San Lorenzo Water Treatment Plant  
(concluded)

TREATMENT PLANT 3  
FELTON WATER TREATMENT PLANT.

COSTS BASED ON SOLID REMOVAL & CHLORINATION

MAXIMUM DESIGN FLOW	.500E+01	MGD
HIGH DAY DESIGN FLOW	.500E+01	MGD
AVERAGE DESIGN FLOW	.500E+01	MGD
MINIMUM DESIGN FLOW	.500E+01	MGD

ECONOMIC FACTORS

YEAR CONSTRUCTED	1980	YEAR
DESIGN LIFE	20	YEARS
INTEREST RATE	.663E+01	PERCENT
WAGE O&M	.750E+01	\$/HR
ENR CONSTRUCTION INDEX	.268E+04	
CITY MULTIPLIER	.114E+01	

COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 w/o. % INFLATION
CONSTRUCTION(\$)	.234E+07	.206E+07	.234E+07
OVERHEAD(\$)	.234E+06	.206E+06	.234E+06
CAPITAL COST(\$)	.257E+07	.226E+07	.257E+07
AMORTIZED(\$/YR)	.236E+06	.208E+06	.236E+06
LABOR(MAN-HR/YR)	0.	0.	0.
LABOR COST(\$/YR)	0.	0.	0.
SUPPLY COST(\$/YR)	.214E+06	.188E+06	.214E+06
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.214E+06	.188E+06	.214E+06
AVE ANNUAL(\$/YR)	.450E+06	.396E+06	.512E+06

PERCENT DEPRECIATED

0.

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Felton Water Treatment Plant  
(continued)



1978 WORTH OF	1980 PLANT COST	2264073.	
1978 WORTH OF	2000 PLANT COST	627639.	
1978 WORTH OF	2020 PLANT COST	173992.	
1978 WORTH OF	2020 PLANT SALVAGE	173992.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		2622905.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	5514617.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 391829.

1978 WORTH OF	1990 PLANT COST	1192065.	
1978 WORTH OF	2010 PLANT COST	330460.	
1978 WORTH OF	2020 PLANT SALVAGE	86996.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		1277611.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	2713140.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 192776.

1978 WORTH OF	2000 PLANT COST	627639.	
1978 WORTH OF	2020 PLANT COST	173992.	
1978 WORTH OF	2020 PLANT SALVAGE	173992.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		569295.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	1196933.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 85046.

1978 WORTH OF	2010 PLANT COST	330460.	
1978 WORTH OF	2020 PLANT SALVAGE	86996.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		196357.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	439821.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 31251.

Felton Water Treatment Plant  
(concluded)

TREATMENT PLANT 4  
GORDOLA WATER TREATMENT PLANT

COSTS BASED ON SOLID REMOVAL & CHLORINATION

MAXIMUM DESIGN FLOW	.200E+02	MGD
HIGH DAY DESIGN FLOW	.200E+02	MGD
AVERAGE DESIGN FLOW	.200E+02	MGD
MINIMUM DESIGN FLOW	.200E+02	MGD

ECONOMIC FACTORS		
YEAR CONSTRUCTED	1980	YEAR
DESIGN LIFE	20	YEARS
INTEREST RATE	.663E+01	PERCENT
WAGE O&M	.750E+01	\$/HR
ENR CONSTRUCTION INDEX	.268E+04	
CITY MULTIPLIER	.114E+01	

COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 w/o % INFLATION
CONSTRUCTION(\$)	.656E+07	.577E+07	.656E+07
OVERHEAD(\$)	.656E+06	.577E+06	.656E+06
CAPITAL COST(\$)	.722E+07	.635E+07	.722E+07
AMORTIZED(\$/YR)	.661E+06	.582E+06	.661E+06
LABOR(MAN-HR/YR)	0.	0.	0.
LABOR COST(\$/YR)	0.	0.	0.
SUPPLY COST(\$/YR)	.518E+06	.455E+06	.518E+06
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.518E+06	.455E+06	.518E+06
AVE ANNUAL(\$/YR)	.118E+07	.104E+07	.134E+07

PERCENT DEPRECIATED

0.

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Gordola Water Treatment Plant  
(continued)

1978 WORTH OF	1980 PLANT COST	6347145.	
1978 WORTH OF	2000 PLANT COST	1759534.	
1978 WORTH OF	2020 PLANT COST	487772.	
1978 WORTH OF	2020 PLANT SALVAGE	487772.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		6348901.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	14455580.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 1027111.

1978 WORTH OF	1990 PLANT COST	3341858.	
1978 WORTH OF	2010 PLANT COST	926419.	
1978 WORTH OF	2020 PLANT SALVAGE	243886.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		5092534.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	7116925.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 505678.

1978 WORTH OF	2000 PLANT COST	1759534.	
1978 WORTH OF	2020 PLANT COST	487772.	
1978 WORTH OF	2020 PLANT SALVAGE	487772.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		1578013.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	3137547.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 222932.

1978 WORTH OF	2010 PLANT COST	926419.	
1978 WORTH OF	2020 PLANT SALVAGE	243886.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		475294.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	1157826.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 82267.

Gordola Water Treatment Plant  
(concluded)



GORDOLA WATER TREATMENT PLANT  
TREATMENT PLANT 4

GORDOLA WATER TREATMENT PLANT

COSTS BASED ON SOLID REMOVAL & CHLORINATION

MAXIMUM DESIGN FLOW	.100E+02	MGD
HIGH DAY DESIGN FLOW	.100E+02	MGD
AVERAGE DESIGN FLOW	.100E+02	MGD
MINIMUM DESIGN FLOW	.100E+02	MGD

ECONOMIC FACTORS

YEAR CONSTRUCTED	1980	YEAR
DESIGN LIFE	20	YEARS
INTEREST RATE	.663E+01	PERCENT
WAGE O&M	.750E+01	\$/HR
ENR CONSTRUCTION INDEX	.268E+04	
CITY MULTIPLIER	.114E+01	

COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 w/o % INFLATION
CONSTRUCTION(\$)	.385E+07	.339E+07	.385E+07
OVERHEAD(\$)	.385E+06	.339E+06	.385E+06
CAPITAL COST(\$)	.424E+07	.373E+07	.424E+07
AMORTIZED(\$/YR)	.389E+06	.342E+06	.389E+06
LABOR(MAN-HR/YR)	0.	0.	0.
LABOR COST(\$/YR)	0.	0.	0.
SUPPLY COST(\$/YR)	.384E+06	.338E+06	.384E+06
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.384E+06	.338E+06	.384E+06
AVE ANNUAL(\$/YR)	.773E+06	.680E+06	.879E+06

PERCENT DEPRECIATED

0.

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Gordola Water Treatment Plant  
(continued)

1978 WORTH OF	1980 PLANT COST	3725078.	
1978 WORTH OF	2000 PLANT COST	1032653.	
1978 WORTH OF	2020 PLANT COST	286269.	
1978 WORTH OF	2020 PLANT SALVAGE	286269.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS	4706521.	
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	9464252.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 672462.

1978 WORTH OF	1990 PLANT COST	1961304.	
1978 WORTH OF	2010 PLANT COST	543706.	
1978 WORTH OF	2020 PLANT SALVAGE	143134.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS	2292535.	
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	4654411.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 330709.

1978 WORTH OF	2000 PLANT COST	1032653.	
1978 WORTH OF	2020 PLANT COST	286269.	
1978 WORTH OF	2020 PLANT SALVAGE	286269.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS	1021538.	
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	2054192.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 145956.

1978 WORTH OF	2010 PLANT COST	543706.	
1978 WORTH OF	2020 PLANT SALVAGE	143134.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS	352341.	
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	752913.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 53497.

Gordola Water Treatment Plant  
(concluded)

# TREATMENT PLANT 5

APTOS - SOQUEL WATER TREATMENT PLANT

## COSTS BASED ON SOLID REMOVAL & CHORINATION

MAXIMUM DESIGN FLOW	.400E+01	MGD
HIGH DAY DESIGN FLOW	.400E+01	MGD
AVERAGE DESIGN FLOW	.400E+01	MGD
MINIMUM DESIGN FLOW	.400E+01	MGD

## ECONOMIC FACTORS

YEAR CONSTRUCTED	1980	YEAR
DESIGN LIFE	20	YEARS
INTEREST RATE	.663E+01	PERCENT
WAGE O&M	.750E+01	\$/HR
ENR CONSTRUCTION INDEX	.268E+04	
CITY MULTIPLIER	.114E+01	

## COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O. % INFLATION
CONSTRUCTION(\$)	.199E+07	.175E+07	.199E+07
OVERHEAD(\$)	.199E+06	.175E+06	.199E+06
CAPITAL COST(\$)	.219E+07	.193E+07	.219E+07
AMORTIZED(\$/YR)	.201E+06	.177E+06	.201E+06
LABOR(MAN-HR/YR)	0.	0.	0.
LABOR COST(\$/YR)	0.	0.	0.
SUPPLY COST(\$/YR)	.180E+06	.158E+06	.180E+06
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.180E+06	.158E+06	.180E+06
AVE ANNUAL(\$/YR)	.381E+06	.335E+06	.433E+06

PERCENT DEPRECIATED

0.

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Aptos-Soquel Water Treatment Plant  
(continued)



1978 WORTH OF	1980 PLANT COST	1925430.	
1978 WORTH OF	2000 PLANT COST	533761.	
1978 WORTH OF	2020 PLANT COST	147967.	
1978 WORTH OF	2020 PLANT SALVAGE	147967.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		2206182.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	4665372.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 331488.

1978 WORTH OF	1990 PLANT COST	1013765.	
1978 WORTH OF	2010 PLANT COST	281032.	
1978 WORTH OF	2020 PLANT SALVAGE	73984.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		1074626.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	2295439.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 163098.

1978 WORTH OF	2000 PLANT COST	533761.	
1978 WORTH OF	2020 PLANT COST	147967.	
1978 WORTH OF	2020 PLANT SALVAGE	147967.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		478846.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	1012607.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 71949.

1978 WORTH OF	2010 PLANT COST	281032.	
1978 WORTH OF	2020 PLANT SALVAGE	73984.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		165160.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	372209.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 26447.

Aptos-Soquel Water Treatment Plant  
(concluded)

# TREATMENT PLANT 5

APTOS - SOQUEL WATER TREATMENT PLANT

## COSTS BASED ON SOLID REMOVAL & CHLORINATION

MAXIMUM DESIGN FLOW	.700E+01	MGD
HIGH DAY DESIGN FLOW	.700E+01	MGD
AVERAGE DESIGN FLOW	.700E+01	MGD
MINIMUM DESIGN FLOW	.700E+01	MGD

## ECONOMIC FACTORS

YEAR CONSTRUCTED	1980	YEAR
DESIGN LIFE	20	YEARS
INTEREST RATE	.663E+01	PERCENT
WAGE O&M	.750E+01	\$/HR
ENR CONSTRUCTION INDEX	.268E+04	
CITY MULTIPLIER	.114E+01	

## COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O. % INFLATION
CONSTRUCTION(\$)	.298E+07	.262E+07	.298E+07
OVERHEAD(\$)	.298E+06	.262E+06	.298E+06
CAPITAL COST(\$)	.328E+07	.288E+07	.328E+07
AMORTIZED(\$/YR)	.301E+06	.264E+06	.301E+06
LABOR(MAN-HR/YR)	0.	0.	0.
LABOR COST(\$/YR)	0.	0.	0.
SUPPLY COST(\$/YR)	.282E+06	.248E+06	.282E+06
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.282E+06	.248E+06	.282E+06
AVE ANNUAL(\$/YR)	.583E+06	.513E+06	.663E+06

PERCENT DEPRECIATED

0.

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Aptos-Soquel Water Treatment Plant  
(continued)

1978 WORTH OF 1980 PLANT COST 2883307.  
 1978 WORTH OF 2000 PLANT COST 799300.  
 1978 WORTH OF 2020 PLANT COST 221579.  
 1978 WORTH OF 2020 PLANT SALVAGE 221579.  
 1978 WORTH OF LAND USE FROM 1980 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS 3456351.  
 1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS 7138959.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 507244.

1978 WORTH OF 1990 PLANT COST 1518100.  
 1978 WORTH OF 2010 PLANT COST 420843.  
 1978 WORTH OF 2020 PLANT SALVAGE 110790.  
 1978 WORTH OF LAND USE FROM 1990 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS 1683580.  
 1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS 3511733.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 249519.

1978 WORTH OF 2000 PLANT COST 799300.  
 1978 WORTH OF 2020 PLANT COST 221579.  
 1978 WORTH OF 2020 PLANT SALVAGE 221579.  
 1978 WORTH OF LAND USE FROM 2000 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS 750192.  
 1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS 1549493.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 110096.

1978 WORTH OF 2010 PLANT COST 420843.  
 1978 WORTH OF 2020 PLANT SALVAGE 110790.  
 1978 WORTH OF LAND USE FROM 2010 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS 258751.  
 1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS 568804.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 40415.

Aptos-Soquel Water Treatment Plant  
 (concluded)



# TREATMENT PLANT 6

## WATSONVILLE WATER TREATMENT PLANT

### COSTS BASED ON SOLID REMOVAL & CHORINATION

MAXIMUM DESIGN FLOW	.100E+02 MGD
HIGH DAY DESIGN FLOW	.100E+02 MGD
AVERAGE DESIGN FLOW	.100E+02 MGD
MINIMUM DESIGN FLOW	.100E+02 MGD

### ECONOMIC FACTORS

YEAR CONSTRUCTED	1980	YEAR
DESIGN LIFE	20	YEARS
INTEREST RATE	.663E+01	PERCENT
WAGE O&M	.750E+01	\$/HR
ENR CONSTRUCTION INDEX	.268E+04	
CITY MULTIPLIER	.114E+01	

### COST SUMMARY

	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
			W/O % INFLATION
CONSTRUCTION(\$)	.385E+07	.339E+07	.385E+07
OVERHEAD(\$)	.385E+06	.339E+06	.385E+06
CAPITAL COST(\$)	.424E+07	.373E+07	.424E+07
AMORTIZED(\$/YR)	.389E+06	.342E+06	.389E+06
LABOR(MAN-HR/YR)	0.	0.	0.
LABOR COST(\$/YR)	0.	0.	0.
SUPPLY COST(\$/YR)	.384E+06	.338E+06	.384E+06
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.384E+06	.338E+06	.384E+06
AVE ANNUAL(\$/YR)	.773E+06	.680E+06	.879E+06

PERCENT DEPRECIATED

0.

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Watsonville Water Treatment Plant  
(continued)

1978 WORTH OF	1980 PLANT COST	3725078.	
1978 WORTH OF	2000 PLANT COST	1032653.	
1978 WORTH OF	2020 PLANT COST	286269.	
1978 WORTH OF	2020 PLANT SALVAGE	286269.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS	0.	4706521.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	9464252.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 672462.

1978 WORTH OF	1990 PLANT COST	1961304.	
1978 WORTH OF	2010 PLANT COST	543706.	
1978 WORTH OF	2020 PLANT SALVAGE	143134.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS	0.	2292535.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	4654411.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 330709.

1978 WORTH OF	2000 PLANT COST	1032653.	
1978 WORTH OF	2020 PLANT COST	286269.	
1978 WORTH OF	2020 PLANT SALVAGE	286269.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS	0.	1021538.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	2054192.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 145956.

1978 WORTH OF	2010 PLANT COST	543706.	
1978 WORTH OF	2020 PLANT SALVAGE	143134.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS	0.	552341.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	752913.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 53497.

Watsonville Water Treatment Plant  
(concluded)

# TREATMENT PLANT 9

## APTOS WATER TREATMENT PLANT

### COSTS BASED ON SOLID REMOVAL & CHORINATION

MAXIMUM DESIGN FLOW	.400E+01	MGD
HIGH DAY DESIGN FLOW	.400E+01	MGD
AVERAGE DESIGN FLOW	.400E+01	MGD
MINIMUM DESIGN FLOW	.400E+01	MGD

### ECONOMIC FACTORS

YEAR CONSTRUCTED	1980	YEAR
DESIGN LIFE	20	YEARS
INTEREST RATE	.663E+01	PERCENT
WAGE O&M	.750E+01	\$/HR
ENR CONSTRUCTION INDEX	.268E+04	
CITY MULTIPLIER	.114E+01	

### COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O % INFLATION
CONSTRUCTION(\$)	.199E+07	.175E+07	.199E+07
OVERHEAD(\$)	.199E+06	.175E+06	.199E+06
CAPITAL COST(\$)	.219E+07	.193E+07	.219E+07
AMORTIZED(\$/YR)	.201E+06	.177E+06	.201E+06
LABOR(MAN-HR/YR)	0.	0.	0.
LABOR COST(\$/YR)	0.	0.	0.
SUPPLY COST(\$/YR)	.180E+06	.158E+06	.180E+06
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.180E+06	.158E+06	.180E+06
AVE ANNUAL(\$/YR)	.381E+06	.335E+06	.433E+06

PERCENT DEPRECIATED

0.

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Aptos Water Treatment Plant  
(continued)



1978 WORTH OF	1980 PLANT COST	1925430.	
1978 WORTH OF	2000 PLANT COST	533761.	
1978 WORTH OF	2020 PLANT COST	147967.	
1978 WORTH OF	2020 PLANT SALVAGE	147967.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		2206182.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	4665372.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 331488.

1978 WORTH OF	1990 PLANT COST	1013765.	
1978 WORTH OF	2010 PLANT COST	281032.	
1978 WORTH OF	2020 PLANT SALVAGE	73984.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		1074626.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	2295439.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 163098.

1978 WORTH OF	2000 PLANT COST	533761.	
1978 WORTH OF	2020 PLANT COST	147967.	
1978 WORTH OF	2020 PLANT SALVAGE	147967.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		478846.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	1012607.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 71949.

1978 WORTH OF	2010 PLANT COST	281032.	
1978 WORTH OF	2020 PLANT SALVAGE	73984.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		165160.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	372209.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 26447.

Aptos Water Treatment Plant  
(concluded)

TREATMENT PLANT 11  
GROUNDWATER TREATMENT

COST BASED ON CHLORINATION ONLY

MAXIMUM DESIGN FLOW	.500E+01	MGD
HIGH DAY DESIGN FLOW	.500E+01	MGD
AVERAGE DESIGN FLOW	.500E+01	MGD
MINIMUM DESIGN FLOW	.500E+01	MGD

ECONOMIC FACTORS	
YEAR CONSTRUCTED	1980
DESIGN LIFE	20 YEARS
INTEREST RATE	.663E+01 PERCENT
WAGE O&M	.750E+01 \$/HR
ENR CONSTRUCTION INDEX	.268E+04
CITY MULTIPLIER	.114E+01

COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O. % INFLATION
CONSTRUCTION(\$)	.210E+06	.185E+06	.210E+06
OVERHEAD(\$)	.210E+05	.185E+05	.210E+05
CAPITAL COST(\$)	.231E+06	.203E+06	.231E+06
AMORTIZED(\$/YR)	.212E+05	.186E+05	.212E+05
LABOR(MAN-HR/YR)	0.	0.	0.
LABOR COST(\$/YR)	0.	0.	0.
SUPPLY COST(\$/YR)	.298E+05	.262E+05	.298E+05
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.298E+05	.262E+05	.298E+05
AVE ANNUAL(\$/YR)	.510E+05	.448E+05	.579E+05

PERCENT DEPRECIATED

0.

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Treatment for Groundwater Supply  
(continued)

1978 WORTH OF	1980 PLANT COST	203186.	
1978 WORTH OF	2000 PLANT COST	56327.	
1978 WORTH OF	2020 PLANT COST	15615.	
1978 WORTH OF	2020 PLANT SALVAGE	15615.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS	624758.	365246.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		44391.	

1978 WORTH OF	1990 PLANT COST	106980.	
1978 WORTH OF	2010 PLANT COST	29657.	
1978 WORTH OF	2020 PLANT SALVAGE	7807.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS	306740.	177910.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		21795.	

1978 WORTH OF	2000 PLANT COST	56327.	
1978 WORTH OF	2020 PLANT COST	15615.	
1978 WORTH OF	2020 PLANT SALVAGE	15615.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS	135602.	79276.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		9635.	

1978 WORTH OF	2010 PLANT COST	29657.	
1978 WORTH OF	2020 PLANT SALVAGE	7807.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS	49193.	27343.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		3495.	

Treatment for Groundwater Supply  
(concluded)



WELLFIELD 1  
 TITLE SANTA CRUZ  
 DESIGN FACTORS  
 NUMBER OF WELLS IN FIELD .100E+02  
 DEPTH OF DRILLING .300E+03 FEET  
 DEPTH TO GROUNDWATER .200E+03 FEET  
 DRAWDOWN DURING PUMPING .320E+03 FEET  
 HEAD REQUIRED FOR PUMPING .520E+03 FEET  
 ANNUAL POWER REQUIREMENT .113E+06 KWHR  
 CAPACITY OF PUMPING EQUIPMENT .182E+03 HORSEPOWER  
 MAXIMUM FLOW .200E+01 MGD  
 AVERAGE FLOW .100E+01 MGD

ECONOMIC FACTORS  
 YEAR CONSTRUCTED 1980  
 DESIGN LIFE 20 YEARS  
 INTEREST RATE .663E+01 PERCENT  
 POWER COST .500E-01 \$/KWHR  
 ENR-CC INDEX .268E+04  
 AVERAGE WAGE .750E+01 \$/HR  
 CITY MULTIPLIER .114E+01  
 COST TO DRILL ONE WELL .297E+05 \$  
 COST FOR PUMPING EQUIPMENT .486E+05 \$

COST SUMMARY			
	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O % INFLATION
CONSTRUCTION(\$)	.956E+06	.841E+06	.956E+06
OVERHEAD(\$)	.956E+05	.841E+05	.956E+05
CAPITAL COST(\$)	.105E+07	.925E+06	.105E+07
AMORTIZED(\$/YR)	.964E+05	.848E+05	.964E+05
LABOR(MAN-HR/YR)	.200E+04	.200E+04	.200E+04
LABOR COST(\$/YR)	.150E+05	.132E+05	.150E+05
SUPPLY COST(\$/YR)	.191E+05	.168E+05	.191E+05
POWER(\$/YR)	.565E+05	.497E+05	.565E+05
TOTAL O&M(\$/YR)	.906E+05	.797E+05	.906E+05
AVE ANNUAL(\$/YR)	.187E+06	.165E+06	.213E+06

PERCENT DEPRECIATED

0.

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Wellfield in San Lorenzo Valley  
 (continued)

1978 WORTH OF	1980 PLANT COST	470231.	
1978 WORTH OF	2000 PLANT COST	130356.	
1978 WORTH OF	2020 PLANT COST	36137.	
1978 WORTH OF	2020 PLANT SALVAGE	36137.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	241163.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS	1110445.	
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	1952194.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 138709.

1978 WORTH OF	1990 PLANT COST	247583.	
1978 WORTH OF	2010 PLANT COST	68634.	
1978 WORTH OF	2020 PLANT SALVAGE	18068.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	117470.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS	540895.	
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	956513.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 67963.

1978 WORTH OF	2000 PLANT COST	130356.	
1978 WORTH OF	2020 PLANT COST	36137.	
1978 WORTH OF	2020 PLANT SALVAGE	36137.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	52344.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS	241019.	
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	423719.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 30106.

1978 WORTH OF	2010 PLANT COST	68634.	
1978 WORTH OF	2020 PLANT SALVAGE	18068.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	18054.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS	83131.	
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	151750.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 10782.

Wellfield in San Lorenzo Valley  
(concluded)



# PUMPING STATION 3

## FELTON PUMPING STATION

PUMP HEAD	.437E+03	FEET
PUMP POWER	.256E+04	HORSEPOWER
ELECTRICAL USAGE	.836E+07	KWHR/YEAR
MAXIMUM DESIGN FLOW	.200E+02	MGD
HIGH DAY DESIGN FLOW	.150E+02	MGD
AVERAGE DESIGN FLOW	.100E+02	MGD
MINIMUM DESIGN FLOW	.800E+01	MGD
OVERALL EFFICIENCY	.600E+02	PERCENT
INITIAL ELEVATION	0.	FEET
FINAL ELEVATION	0.	FEET
INITIAL PRESSURE HEAD	0.	FEET
FINAL PRESSURE HEAD	.437E+03	FEET
INITIAL TOTAL HEAD	0.	FEET
FINAL TOTAL HEAD	.437E+03	FEET

## ECONOMIC FACTORS

CITY MULTIPLIER	.114E+01	
DESIGN LIFE	20	YEARS
INTEREST RATE	.663E+01	PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03	
AVERAGE O&M WAGEOM	.750E+01	DOLLARS/HOUR
COST OF ELECTRICITY	.500E-01	DOLLARS/KWHR

## COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 w/o. % INFLATION
CONSTRUCTION(\$)	.130E+07	.114E+07	.130E+07
OVERHEAD(\$)	.130E+06	.114E+06	.130E+06
CAPITAL COST(\$)	.143E+07	.125E+07	.143E+07
AMORTIZED(\$/YR)	.131E+06	.115E+06	.131E+06
LABOR(MAN-HR/YR)	.143E+04	.143E+04	.143E+04
LABOR COST(\$/YR)	.107E+05	.942E+04	.107E+05
SUPPLY COST(\$/YR)	.210E+04	.185E+04	.210E+04
POWER(\$/YR)	.418E+06	.368E+06	.418E+06
TOTAL O&M(\$/YR)	.431E+06	.379E+06	.431E+06
AVE ANNUAL(\$/YR)	.561E+06	.494E+06	.638E+06

PERCENT DEPRECIATED

0.

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Felton Pumping Station  
(continued)



1978 WORTH OF	1980 PLANT COST	1257818.	
1978 WORTH OF	2000 PLANT COST	348688.	
1978 WORTH OF	2020 PLANT COST	96662.	
1978 WORTH OF	2020 PLANT SALVAGE	96662.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		1760852.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	3367358.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 239261.

1978 WORTH OF	1990 PLANT COST	662259.	
1978 WORTH OF	2010 PLANT COST	183589.	
1978 WORTH OF	2020 PLANT SALVAGE	48331.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		857707.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	1655223.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 117608.

1978 WORTH OF	2000 PLANT COST	348688.	
1978 WORTH OF	2020 PLANT COST	96662.	
1978 WORTH OF	2020 PLANT SALVAGE	96662.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		382188.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	730876.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 51931.

1978 WORTH OF	2010 PLANT COST	183589.	
1978 WORTH OF	2020 PLANT SALVAGE	48331.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		131822.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	267080.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 18977.

Felton Pumping Station  
(concluded)

# PUMPING STATION 4

## PAJARO - PESCADERO PUMP STATION

PUMP HEAD	.204E+03	FEET
PUMP POWER	.119E+04	HORSEPOWER
ELECTRICAL USAGE	.390E+07	KWHR/YEAR
MAXIMUM DESIGN FLOW	.200E+02	MGD
HIGH DAY DESIGN FLOW	.150E+02	MGD
AVERAGE DESIGN FLOW	.100E+02	MGD
MINIMUM DESIGN FLOW	.800E+01	MGD
OVERALL EFFICIENCY	.600E+02	PERCENT
INITIAL ELEVATION	0.	FEET
FINAL ELEVATION	0.	FEET
INITIAL PRESSURE HEAD	0.	FEET
FINAL PRESSURE HEAD	.204E+03	FEET
INITIAL TOTAL HEAD	0.	FEET
FINAL TOTAL HEAD	.204E+03	FEET

## ECONOMIC FACTORS

CITY MULTIPLIER	.114E+01	
DESIGN LIFE	20	YEARS
INTEREST RATE	.663E+01	PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03	
AVERAGE O&M WAGE/OM	.750E+01	DOLLARS/HOUR
COST OF ELECTRICITY	.500E-01	DOLLARS/KWHR

## COST SUMMARY

	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS	
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980	% INFLATION
CONSTRUCTION(\$)	.114E+07	.999E+06	.114E+07	
OVERHEAD(\$)	.114E+06	.999E+05	.114E+06	
CAPITAL COST(\$)	.125E+07	.110E+07	.125E+07	
AMORTIZED(\$/YR)	.114E+06	.101E+06	.114E+06	
LABOR(MAN-HR/YR)	.143E+04	.143E+04	.143E+04	
LABOR COST(\$/YR)	.107E+05	.942E+04	.107E+05	
SUPPLY COST(\$/YR)	.210E+04	.185E+04	.210E+04	
POWER(\$/YR)	.195E+06	.172E+06	.195E+06	
TOTAL O&M(\$/YR)	.208E+06	.183E+06	.208E+06	
AVE ANNUAL(\$/YR)	.322E+06	.284E+06	.366E+06	

PERCENT DEPRECIATED

0.

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Pumping Station for Pipeline from Pajaro River to Pescadero Reservoir  
(continued)



1978 WORTH OF	1980 PLANT COST	1103010.	
1978 WORTH OF	2000 PLANT COST	305773.	
1978 WORTH OF	2020 PLANT COST	84765.	
1978 WORTH OF	2020 PLANT SALVAGE	84765.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		849784.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	2258567.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 160478.

1978 WORTH OF	1990 PLANT COST	580750.	
1978 WORTH OF	2010 PLANT COST	160993.	
1978 WORTH OF	2020 PLANT SALVAGE	42383.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		413928.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	1113289.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 79102.

1978 WORTH OF	2000 PLANT COST	305773.	
1978 WORTH OF	2020 PLANT COST	84765.	
1978 WORTH OF	2020 PLANT SALVAGE	84765.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		184444.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	490216.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 54831.

1978 WORTH OF	2010 PLANT COST	160993.	
1978 WORTH OF	2020 PLANT SALVAGE	42383.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		63617.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	182228.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 12948.

Pumping Station for Pipeline from Pajaro River to Pescadero Reservoir  
(concluded)



# PUMPING STATION 5

## CORNCOB PUMP STATION

PUMP HEAD	.126E+03	FEET
PUMP POWER	.737E+03	HORSEPOWER
ELECTRICAL USAGE	.241E+07	KWHR/YEAR
MAXIMUM DESIGN FLOW	.200E+02	MGD
HIGH DAY DESIGN FLOW	.150E+02	MGD
AVERAGE DESIGN FLOW	.100E+02	MGD
MINIMUM DESIGN FLOW	.800E+01	MGD
OVERALL EFFICIENCY	.600E+02	PERCENT
INITIAL ELEVATION	0.	FEET
FINAL ELEVATION	0.	FEET
INITIAL PRESSURE HEAD	0.	FEET
FINAL PRESSURE HEAD	.126E+03	FEET
INITIAL TOTAL HEAD	0.	FEET
FINAL TOTAL HEAD	.126E+03	FEET

## ECONOMIC FACTORS

CITY MULTIPLIER	.114E+01	
DESIGN LIFE	20	YEARS
INTEREST RATE	.663E+01	PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03	
AVERAGE O&M WAGEOM	.750E+01	DOLLARS/HOUR
COST OF ELECTRICITY	.500E-01	DOLLARS/KWHR

## COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O. % INFLATION
CONSTRUCTION(\$)	.104E+07	.919E+06	.104E+07
OVERHEAD(\$)	.104E+06	.919E+05	.104E+06
CAPITAL COST(\$)	.115E+07	.101E+07	.115E+07
AMORTIZED(\$/YR)	.105E+06	.926E+05	.105E+06
LABOR(MAN-HR/YR)	.143E+04	.143E+04	.143E+04
LABOR COST(\$/YR)	.107E+05	.942E+04	.107E+05
SUPPLY COST(\$/YR)	.210E+04	.185E+04	.210E+04
POWER(\$/YR)	.120E+06	.106E+06	.120E+06
TOTAL O&M(\$/YR)	.133E+06	.117E+06	.133E+06
AVE ANNUAL(\$/YR)	.239E+06	.210E+06	.271E+06

PERCENT DEPRECIATED

0.

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Pumping Station from Pajaro River to Corncob Canyon Reservoir  
(continued)

1978 WORTH OF	1980 PLANT COST	1006255.	
1978 WORTH OF	2000 PLANT COST	278951.	
1978 WORTH OF	2020 PLANT COST	77330.	
1978 WORTH OF	2020 PLANT SALVAGE	77330.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		543370.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	1828576.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 129926.

1978 WORTH OF	1990 PLANT COST	529807.	
1978 WORTH OF	2010 PLANT COST	146871.	
1978 WORTH OF	2020 PLANT SALVAGE	38665.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		264674.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	902688.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 64139.

1978 WORTH OF	2000 PLANT COST	278951.	
1978 WORTH OF	2020 PLANT COST	77330.	
1978 WORTH OF	2020 PLANT SALVAGE	77330.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		117937.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	396888.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 28200.

1978 WORTH OF	2010 PLANT COST	146871.	
1978 WORTH OF	2020 PLANT SALVAGE	38665.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		40678.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	148884.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 10579.

Pumping Station from Pajaro River to Corncob Canyon Reservoir  
(concluded)



# PUMPING STATION 6

## GORDOLA PUMP STATION

PUMP HEAD	.215E+03	FEET
PUMP POWER	.811E+03	HORSEPOWER
ELECTRICAL USAGE	.354E+07	KWHR/YEAR
MAXIMUM DESIGN FLOW	.129E+02	MGD
HIGH DAY DESIGN FLOW	.100E+02	MGD
AVERAGE DESIGN FLOW	.860E+01	MGD
MINIMUM DESIGN FLOW	0.	MGD
OVERALL EFFICIENCY	.600E+02	PERCENT
INITIAL ELEVATION	0.	FEET
FINAL ELEVATION	0.	FEET
INITIAL PRESSURE HEAD	0.	FEET
FINAL PRESSURE HEAD	.215E+03	FEET
INITIAL TOTAL HEAD	0.	FEET
FINAL TOTAL HEAD	.215E+03	FEET

## ECONOMIC FACTORS

CITY MULTIPLIER	.114E+01	
DESIGN LIFE	20	YEARS
INTEREST RATE	.663E+01	PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03	
AVERAGE O&M WAGFOM	.750E+01	DOLLARS/HOUR
COST OF ELECTRICITY	.500E-01	DOLLARS/KWHR

## COST SUMMARY

	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
			W/O. % INFLATION
CONSTRUCTION(\$)	.941E+06	.827E+06	.941E+06
OVERHEAD(\$)	.941E+05	.827E+05	.941E+05
CAPITAL COST(\$)	.103E+07	.910E+06	.103E+07
AMORTIZED(\$/YR)	.948E+05	.834E+05	.948E+05
LABOR(MAN-HR/YR)	.131E+04	.131E+04	.131E+04
LABOR COST(\$/YR)	.980E+04	.862E+04	.980E+04
SUPPLY COST(\$/YR)	.183E+04	.161E+04	.183E+04
POWER(\$/YR)	.177E+06	.156E+06	.177E+06
TOTAL O&M(\$/YR)	.188E+06	.166E+06	.188E+06
AVE ANNUAL(\$/YR)	.283E+06	.249E+06	.322E+06

PERCENT DEPRECIATED

0.

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North Coast Pipeline Pumping Station to Gordola  
(continued)



1978 WORTH OF	1980 PLANT COST	910467.	
1978 WORTH OF	2000 PLANT COST	252397.	
1978 WORTH OF	2020 PLANT COST	69969.	
1978 WORTH OF	2020 PLANT SALVAGE	69969.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		2304234.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	5467098.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 246347.

1978 WORTH OF	1990 PLANT COST	479373.	
1978 WORTH OF	2010 PLANT COST	132890.	
1978 WORTH OF	2020 PLANT SALVAGE	34984.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		1122387.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	1699666.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 120766.

1978 WORTH OF	2000 PLANT COST	252397.	
1978 WORTH OF	2020 PLANT COST	69969.	
1978 WORTH OF	2020 PLANT SALVAGE	69969.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		500128.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	752525.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 53469.

1978 WORTH OF	2010 PLANT COST	132890.	
1978 WORTH OF	2020 PLANT SALVAGE	34984.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		172500.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	270406.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 19213.

North Coast Pipeline Pumping Station to Gordola  
(concluded)

# PUMPING STATION 7

## APTOS PUMP STATION

PUMP HEAD	.506E+03	FEET
PUMP POWER	.118E+04	HORSEPOWER
ELECTRICAL USAGE	.387E+07	KWHR/YEAR
MAXIMUM DESIGN FLOW	.800E+01	MGD
HIGH DAY DESIGN FLOW	.600E+01	MGD
AVERAGE DESIGN FLOW	.400E+01	MGD
MINIMUM DESIGN FLOW	0.	MGD
OVERALL EFFICIENCY	.600E+02	PERCENT
INITIAL ELEVATION	0.	FEET
FINAL ELEVATION	0.	FEET
INITIAL PRESSURE HEAD	0.	FEET
FINAL PRESSURE HEAD	.506E+03	FEET
INITIAL TOTAL HEAD	0.	FEET
FINAL TOTAL HEAD	.506E+03	FEET
ECONOMIC FACTORS		
CITY MULTIPLIER	.114E+01	
DESIGN LIFE	20	YEARS
INTEREST RATE	.663E+01	PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03	
AVERAGE O&M WAGEOM	.750E+01	DOLLARS/HOUR
COST OF ELECTRICITY	.500E-01	DOLLARS/KWHR

## COST SUMMARY

	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
			W/O. % INFLATION
CONSTRUCTION(\$)	.880E+06	.774E+06	.880E+06
OVERHEAD(\$)	.880E+05	.774E+05	.880E+05
CAPITAL COST(\$)	.968E+06	.851E+06	.968E+06
AMORTIZED(\$/YR)	.887E+05	.780E+05	.887E+05
LABOR(MAN-HR/YR)	.836E+03	.836E+03	.836E+03
LABOR COST(\$/YR)	.627E+04	.551E+04	.627E+04
SUPPLY COST(\$/YR)	.906E+03	.797E+03	.906E+03
POWER(\$/YR)	.194E+06	.170E+06	.194E+06
TOTAL O&M(\$/YR)	.201E+06	.177E+06	.201E+06
AVE ANNUAL(\$/YR)	.289E+06	.255E+06	.329E+06

PERCENT DEPRECIATED

0.

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Pump Station from Aptos Creek to Aptos-Soquel WTP  
(continued)

1978 WORTH OF	1980 PLANT COST	851446.	
1978 WORTH OF	2000 PLANT COST	236035.	
1978 WORTH OF	2020 PLANT COST	65433.	
1978 WORTH OF	2020 PLANT SALVAGE	65433.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		2463570.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	3551051.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 252312.

1978 WORTH OF	1990 PLANT COST	448298.	
1978 WORTH OF	2010 PLANT COST	124276.	
1978 WORTH OF	2020 PLANT SALVAGE	32716.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		1199999.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	1739856.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 123622.

1978 WORTH OF	2000 PLANT COST	236035.	
1978 WORTH OF	2020 PLANT COST	65433.	
1978 WORTH OF	2020 PLANT SALVAGE	65433.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		534711.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	770747.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 54764.

1978 WORTH OF	2010 PLANT COST	124276.	
1978 WORTH OF	2020 PLANT SALVAGE	32716.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		184429.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	275988.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 19610.

Pump Station from Aptos Creek to Aptos-Soquel WTP  
(concluded)



FORCE MAIN 2  
FELTON TO GRAHAM HILL

DESIGN FACTORS	
NOMINAL PIPE DIAMETER	.240E+02 INCHES
PIPE LENGTH	.280E+05 FEET
MAXIMUM DESIGN FLOW	.100E+02 MGD
HIGH DAY DESIGN FLOW	.100E+02 MGD
AVERAGE DESIGN FLOW	.100E+02 MGD
MINIMUM DESIGN FLOW	.100E+02 MGD
VELOCITY AT MAXIMUM FLOW	.492E+01 FPS
VELOCITY AT AVERAGE FLOW	.492E+01 FPS
VELOCITY AT MINIMUM FLOW	.492E+01 FPS

ENERGY CONSIDERATIONS	
INITIAL ELEVATION	.247E+03 FEET
FINAL ELEVATION	.155E+03 FEET
INITIAL PRESSURE HEAD	0 FEET
FINAL PRESSURE HEAD	.948E+00 FEET
VELOCITY HEAD	.377E+00 FEET
DESIGN TEMPERATURE	.200E+02 DEG C
KINEMATIC VISCOSITY	.108E-04 FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02 FEET
FRICTION FACTOR	.173E-01 FEET
REYNOLDS NUMBER	.909E+06
FRICTION HEAD LOSS	.911E+02 FEET
MINOR HEAD LOSSES	0 FEET
TOTAL HEAD LOSSES	.911E+02 FEET
THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW	

CONSTRUCTION FACTORS	
DEPTH OF PIPE	.500E+01 FEET
OPEN COUNTRY	.768E+02 PERCENT
NEW RESIDENTIAL AREA	.710E+01 PERCENT
SPARSE ESTABLISHED RESIDENTIAL AREA	.540E+01 PERCENT
DENSE ESTABLISHED RESIDENTIAL AREA	.107E+02 PERCENT

ECONOMIC FACTORS	
YEAR CONSTRUCTED	1980 YEARS
DESIGN LIFE	.500E+02 YEARS
INTEREST RATE	.663E+01 PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03 PERCENT
CITY MULTIPLIER	.114E+01
WAGE O&M	.750E+01

COST SUMMARY			
	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
			W/O. % INFLATION
CONSTRUCTION(\$)	.120E+07	.105E+07	.120E+07
OVERHEAD(\$)	.120E+06	.105E+06	.120E+06
LAND COST(\$)	.319E+05	.281E+05	.319E+05
CAPITAL COST(\$)	.135E+07	.119E+07	.135E+07
AMORTIZED(\$/YR)	.827E+05	.727E+05	.827E+05
LABOR(MAN-HR/YR)	.234E+00	.234E+00	.234E+00
LABOR COST(\$/YR)	.176E+01	.155E+01	.176E+01
SUPPLY COST(\$/YR)	.328E+04	.288E+04	.328E+04
POWER(\$/YR)	0	0	0
TOTAL O&M(\$/YR)	.328E+04	.288E+04	.328E+04
AVE ANNUAL(\$/YR)	.859E+05	.756E+05	.977E+05

LAND COST OVERRIDE USED	.319E+05
PERCENT DEPRECIATED	0
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New Felton to Graham Hill Line  
(continued)

1978 WORTH OF	1980 PLANT COST	1158235.	
1978 WORTH OF	2020 PLANT SALVAGE	17802.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	25919.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		40176.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	1206528.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 85727.

1978 WORTH OF	1990 PLANT COST	609826.	
1978 WORTH OF	2020 PLANT SALVAGE	35604.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	12625.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		19570.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	606417.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 43088.

1978 WORTH OF	2000 PLANT COST	321082.	
1978 WORTH OF	2020 PLANT SALVAGE	53406.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	5626.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		8720.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	282022.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 20038.

1978 WORTH OF	2010 PLANT COST	169054.	
1978 WORTH OF	2020 PLANT SALVAGE	71207.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	1940.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		3008.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	102795.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 7304.

New Felton to Graham Hill Line  
(concluded)



FORCE MAIN 4  
WATERMAN SWITCH TO UPPER SAN LORENZO

DESIGN FACTORS	
NOMINAL PIPE DIAMETER	.180E+02 INCHES
PIPE LENGTH	.325E+05 FEET
MAXIMUM DESIGN FLOW	.500E+01 MGD
HIGH DAY DESIGN FLOW	.500E+01 MGD
AVERAGE DESIGN FLOW	.500E+01 MGD
MINIMUM DESIGN FLOW	.500E+01 MGD
VELOCITY AT MAXIMUM FLOW	.438E+01 FPS
VELOCITY AT AVERAGE FLOW	.438E+01 FPS
VELOCITY AT MINIMUM FLOW	.438E+01 FPS

ENERGY CONSIDERATIONS	
INITIAL ELEVATION	.370E+03 FEET
FINAL ELEVATION	.247E+03 FEET
INITIAL PRESSURE HEAD	0 FEET
FINAL PRESSURE HEAD	.376E+01 FEET
VELOCITY HEAD	.298E+00 FEET
DESIGN TEMPERATURE	.200E+02 DEG C
KINEMATIC VISCOSITY	.108E-04 FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02 FEET
FRICTION FACTOR	.185E-01 FEET
REYNOLDS NUMBER	.606E+06
FRICTION HEAD LOSS	.119E+03 FEET
MINOR HEAD LOSSES	0 FEET
TOTAL HEAD LOSSES	.119E+03 FEET
THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW	

CONSTRUCTION FACTORS	
DEPTH OF PIPE	.500E+01 FEET
OPEN COUNTRY	.308E+02 PERCENT
SPARSE ESTABLISHED RESIDENTIAL AREA	.569E+02 PERCENT
DENSE ESTABLISHED RESIDENTIAL AREA	.123E+02 PERCENT

ECONOMIC FACTORS	
YEAR CONSTRUCTED	1980 YEARS
DESIGN LIFE	.500E+02 YEARS
INTEREST RATE	.663E+01 PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03 PERCENT
CITY MULTIPLIER	.114E+01
WAGE O&M	.750E+01

COST SUMMARY			
	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
			% INFLATION w/o.
CONSTRUCTION(\$)	.967E+06	.850E+06	.967E+06
OVERHEAD(\$)	.967E+05	.850E+05	.967E+05
LAND COST(\$)	.371E+05	.326E+05	.371E+05
CAPITAL COST(\$)	.110E+07	.968E+06	.110E+07
AMORTIZED(\$/YR)	.667E+05	.587E+05	.667E+05
LABOR(MAN-HR/YR)	.154E+00	.154E+00	.154E+00
LABOR COST(\$/YR)	.116E+01	.102E+01	.116E+01
SUPPLY COST(\$/YR)	.301E+04	.264E+04	.301E+04
POWER(\$/YR)	0	0	0
TOTAL O&M(\$/YR)	.301E+04	.265E+04	.301E+04
AVE ANNUAL(\$/YR)	.697E+05	.613E+05	.793E+05

LAND COST OVERRIDE USED .371E+05  
PERCENT DEPRECIATED 0

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1978 WORTH OF	1980 PLANT COST	935212.		
1978 WORTH OF	2020 PLANT SALVAGE	14374.		
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS		30085.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS			36863.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	987785.		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		70185.		

1978 WORTH OF	1990 PLANT COST	492402.		
1978 WORTH OF	2020 PLANT SALVAGE	28748.		
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS		14654.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS			17956.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	496263.		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		35261.		

1978 WORTH OF	2000 PLANT COST	259256.		
1978 WORTH OF	2020 PLANT SALVAGE	43122.		
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS		6530.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS			8001.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	230665.		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		16389.		

1978 WORTH OF	2010 PLANT COST	136502.		
1978 WORTH OF	2020 PLANT SALVAGE	57496.		
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS		2252.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS			2760.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	84018.		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		5970.		

Waterman Switch Reservoir to Upper San Lorenzo WTP  
(concluded)

FORCE MAIN 5  
KINGS RES TO UPPER SAN LORENZO W/T PLAN

DESIGN FACTORS

NOMINAL PIPE DIAMETER	.150E+02	INCHES
PIPE LENGTH	.220E+05	FEET
MAXIMUM DESIGN FLOW	.500E+01	MGD
HIGH DAY DESIGN FLOW	.500E+01	MGD
AVERAGE DESIGN FLOW	.500E+01	MGD
MINIMUM DESIGN FLOW	.500E+01	MGD
VELOCITY AT MAXIMUM FLOW	.630E+01	FPS
VELOCITY AT AVERAGE FLOW	.630E+01	FPS
VELOCITY AT MINIMUM FLOW	.630E+01	FPS

ENERGY CONSIDERATIONS

INITIAL ELEVATION	.460E+03	FEET
FINAL ELEVATION	.247E+03	FEET
INITIAL PRESSURE HEAD	0.	FEET
FINAL PRESSURE HEAD	.316E+01	FEET
VELOCITY HEAD	.617E+00	FEET
DESIGN TEMPERATURE	.200E+02	DEG C
KINEMATIC VISCOSITY	.108E-04	FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02	FEET
FRICTION FACTOR	.193E-01	FEET
REYNOLDS NUMBER	.727E+06	
FRICTION HEAD LOSS	.210E+03	FEET
MINOR HEAD LOSSES	0.	FEET
TOTAL HEAD LOSSES	.210E+03	FEET

THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW

CONSTRUCTION FACTORS

DEPTH OF PIPE	.500E+01	FEET
OPEN COUNTRY	.227E+02	PERCENT
SPARSE ESTABLISHED RESIDENTIAL AREA	.591E+02	PERCENT
DENSE ESTABLISHED RESIDENTIAL AREA	.182E+02	PERCENT

ECONOMIC FACTORS

YEAR CONSTRUCTED	1980	YEARS
DESIGN LIFE	.500E+02	YEARS
INTEREST RATE	.663E+01	PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03	PERCENT
CITY MULTIPLIER	.114E+01	
WAGE O&M	.750E+01	

COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O. % INFLATION
CONSTRUCTION(\$)	.543E+06	.478E+06	.543E+06
OVERHEAD(\$)	.543E+05	.478E+05	.543E+05
LAND COST(\$)	.251E+05	.221E+05	.251E+05
CAPITAL COST(\$)	.622E+06	.548E+06	.622E+06
AMORTIZED(\$/YR)	.375E+05	.330E+05	.375E+05
LABOR(MAN-HR/YR)	.744E+01	.744E+01	.744E+01
LABOR COST(\$/YR)	.558E+00	.491E+00	.558E+00
SUPPLY COST(\$/YR)	.177E+04	.155E+04	.177E+04
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.177E+04	.155E+04	.177E+04
AVE ANNUAL(\$/YR)	.393E+05	.345E+05	.446E+05

LAND COST OVERRIDE USED .251E+05  
PERCENT DEPRECIATED 0.

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1978 WORTH OF	1980 PLANT COST	525472.	
1978 WORTH OF	2020 PLANT SALVAGE	8076.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	20365.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS	559408.	21647.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		39748.	

1978 WORTH OF	1990 PLANT COST	276668.	
1978 WORTH OF	2020 PLANT SALVAGE	16153.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	9920.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS	280980.	10544.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		19964.	

1978 WORTH OF	2000 PLANT COST	145670.	
1978 WORTH OF	2020 PLANT SALVAGE	24229.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	4420.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS	130559.	4698.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		9277.	

1978 WORTH OF	2010 PLANT COST	76697.	
1978 WORTH OF	2020 PLANT SALVAGE	32306.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	1525.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS	47537.	1621.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		3378.	

Kings Creek Reservoir to Upper San Lorenzo WTP  
(concluded)



FORCE MAIN 6  
ZAYANTE RESERVOIR TO FELTON PUMPING STA

DESIGN FACTORS		
NOMINAL PIPE DIAMETER	.300E+02	INCHES
PIPE LENGTH	.265E+05	FEET
MAXIMUM DESIGN FLOW	.200E+02	MGD
HIGH DAY DESIGN FLOW	.200E+02	MGD
AVERAGE DESIGN FLOW	.200E+02	MGD
MINIMUM DESIGN FLOW	.200E+02	MGD
VELOCITY AT MAXIMUM FLOW	.630E+01	FPS
VELOCITY AT AVERAGE FLOW	.630E+01	FPS
VELOCITY AT MINIMUM FLOW	.630E+01	FPS

ENERGY CONSIDERATIONS		
INITIAL ELEVATION	.604E+03	FEET
FINAL ELEVATION	.350E+03	FEET
INITIAL PRESSURE HEAD	0.	FEET
FINAL PRESSURE HEAD	.147E+03	FEET
VELOCITY HEAD	.617E+00	FEET
DESIGN TEMPERATURE	.200E+02	DEG C
KINEMATIC VISCOSITY	.108E-04	FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02	FEET
FRICTION FACTOR	.164E-01	FEET
REYNOLDS NUMBER	.145E+07	
FRICTION HEAD LOSS	.107E+03	FEET
MINOR HEAD LOSSES	0.	FEET
TOTAL HEAD LOSSES	.107E+03	FEET
THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW		

CONSTRUCTION FACTORS		
DEPTH OF PIPE	.500E+01	FEET
OPEN COUNTRY	.415E+02	PERCENT
NEW RESIDENTIAL AREA	.380E+01	PERCENT
SPARSE ESTABLISHED RESIDENTIAL AREA	.415E+02	PERCENT
DENSE ESTABLISHED RESIDENTIAL AREA	.132E+02	PERCENT

ECONOMIC FACTORS		
YEAR CONSTRUCTED	1980	YEARS
DESIGN LIFE	.500E+02	YEARS
INTEREST RATE	.665E+01	PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03	PERCENT
CITY MULTIPLIER	.114E+01	
WAGE O&M	.750E+01	

COST SUMMARY			
	COST IN 1978	COST IN 1978	COST IN 1980
	DOLLARS	DOLLARS	DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
			W/O. % INFLATION
CONSTRUCTION(\$)	.140E+07	.123E+07	.140E+07
OVERHEAD(\$)	.140E+06	.123E+06	.140E+06
LAND COST(\$)	.302E+05	.266E+05	.302E+05
CAPITAL COST(\$)	.157E+07	.138E+07	.157E+07
AMORTIZED(\$/YR)	.964E+05	.848E+05	.964E+05
LABOR(MAN-HR/YR)	.345E+00	.345E+00	.345E+00
LABOR COST(\$/YR)	.259E+01	.228E+01	.259E+01
SUPPLY COST(\$/YR)	.375E+04	.330E+04	.375E+04
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.375E+04	.330E+04	.375E+04
AVE ANNUAL(\$/YR)	.100E+06	.881E+05	.114E+06

LAND COST OVERRIDE USED	.302E+05
PERCENT DEPRECIATED	0.

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**FORCE MAIN 6**  
**FELTON PUMP STATION TO ZAYANTE RESERVOIR**

DESIGN FACTORS	
NOMINAL PIPE DIAMETER	.300E+02 INCHES
PIPE LENGTH	.265E+05 FEET
MAXIMUM DESIGN FLOW	.200E+02 MGD
HIGH DAY DESIGN FLOW	.200E+02 MGD
AVERAGE DESIGN FLOW	.200E+02 MGD
MINIMUM DESIGN FLOW	.200E+02 MGD
VELOCITY AT MAXIMUM FLOW	.630E+01 FPS
VELOCITY AT AVERAGE FLOW	.630E+01 FPS
VELOCITY AT MINIMUM FLOW	.630E+01 FPS

ENERGY CONSIDERATIONS	
INITIAL ELEVATION	.350E+03 FEET
FINAL ELEVATION	.680E+03 FEET
INITIAL PRESSURE HEAD	0 FEET
FINAL PRESSURE HEAD	.437E+03 FEET
VELOCITY HEAD	.617E+00 FEET
DESIGN TEMPERATURE	.200E+02 DEG C
KINEMATIC VISCOSITY	.108E-04 FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02 FEET
FRICTION FACTOR	.164E-01 FEET
REYNOLDS NUMBER	.145E+07
FRICTION HEAD LOSS	.107E+03 FEET
MINOR HEAD LOSSES	0 FEET
TOTAL HEAD LOSSES	.107E+03 FEET
ADDITIONAL HEAD REQUIRED	.437E+03 FEET
THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW	

CONSTRUCTION FACTORS	
DEPTH OF PIPE	.500E+01 FEET
OPEN COUNTRY	.415E+02 PERCENT
NEW RESIDENTIAL AREA	.380E+01 PERCENT
SPARSE ESTABLISHED RESIDENTIAL AREA	.415E+02 PERCENT
DENSE ESTABLISHED RESIDENTIAL AREA	.132E+02 PERCENT

ECONOMIC FACTORS	
YEAR CONSTRUCTED	1980 YEARS
DESIGN LIFE	.500E+02 YEARS
INTEREST RATE	.663E+01 PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03 PERCENT
CITY MULTIPLIER	.114E+01
WAGE O&M	.750E+01

COST SUMMARY			
	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
			W/O. % INFLATION
CONSTRUCTION(\$)	.140E+07	.123E+07	.140E+07
OVERHEAD(\$)	.140E+06	.123E+06	.140E+06
LAND COST(\$)	.302E+05	.266E+05	.302E+05
CAPITAL COST(\$)	.157E+07	.138E+07	.157E+07
AMORTIZED(\$/YR)	.964E+05	.848E+05	.964E+05
LABOR(MAN-HR/YR)	.345E+00	.345E+00	.345E+00
LABOR COST(\$/YR)	.259E+01	.228E+01	.259E+01
SUPPLY COST(\$/YR)	.375E+04	.330E+04	.375E+04
POWER(\$/YR)	0	0	0
TOTAL O&M(\$/YR)	.375E+04	.330E+04	.375E+04
AVE ANNUAL(\$/YR)	.100E+06	.881E+05	.114E+06

LAND COST OVERRIDE USED .302E+05  
 PERCENT DEPRECIATED 0.  
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 STOP --NORMAL TERMINATION



1978 WORTH OF	1980 PLANT COST	1350596.	
1978 WORTH OF	2020 PLANT SALVAGE	20758.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	24530.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		45993.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	1400361.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 99500.

1978 WORTH OF	1990 PLANT COST	711107.	
1978 WORTH OF	2020 PLANT SALVAGE	41517.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	11949.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		22403.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	703942.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 50017.

1978 WORTH OF	2000 PLANT COST	374408.	
1978 WORTH OF	2020 PLANT SALVAGE	62275.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	5324.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		9983.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	327439.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 23266.

1978 WORTH OF	2010 PLANT COST	197131.	
1978 WORTH OF	2020 PLANT SALVAGE	83034.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	1836.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		3443.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	119377.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 8482.

Zayante Reservoir to Felton Pumping Station  
(concluded)



FORCE MAIN 7  
UPPER SOQUEL RES TO APTOS-SOQUEL W/T PL

DESIGN FACTORS

NOMINAL PIPE DIAMETER	.180E+02	INCHES
PIPE LENGTH	.270E+05	FEET
MAXIMUM DESIGN FLOW	.700E+01	MGD
HIGH DAY DESIGN FLOW	.700E+01	MGD
AVERAGE DESIGN FLOW	.700E+01	MGD
MINIMUM DESIGN FLOW	.700E+01	MGD
VELOCITY AT MAXIMUM FLOW	.613E+01	FPS
VELOCITY AT AVERAGE FLOW	.613E+01	FPS
VELOCITY AT MINIMUM FLOW	.613E+01	FPS

ENERGY CONSIDERATIONS

INITIAL ELEVATION	.400E+03	FEET
FINAL ELEVATION	.205E+03	FEET
INITIAL PRESSURE HEAD	0.	FEET
FINAL PRESSURE HEAD	.862E+00	FEET
VELOCITY HEAD	.583E+00	FEET
DESIGN TEMPERATURE	.200E+02	DEG C
KINEMATIC VISCOSITY	.108E-04	FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02	FEET
FRICTION FACTOR	.185E-01	FEET
REYNOLDS NUMBER	.849E+06	
FRICTION HEAD LOSS	.194E+03	FEET
MINOR HEAD LOSSES	0.	FEET
TOTAL HEAD LOSSES	.194E+03	FEET
THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW		

CONSTRUCTION FACTORS

DEPTH OF PIPE	.500E+01	FEET
OPEN COUNTRY	.370E+02	PERCENT
SPARSE ESTABLISHED RESIDENTIAL AREA	.389E+02	PERCENT
COMMERCIAL AREA	.241E+02	PERCENT

ECONOMIC FACTORS

YEAR CONSTRUCTED	1980	YEARS
DESIGN LIFE	.500E+02	YEARS
INTEREST RATE	.663E+01	PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03	PERCENT
CITY MULTIPLIER	.114E+01	
WAGE O&M	.750E+01	

COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O % INFLATION
CONSTRUCTION(\$)	.833E+06	.732E+06	.833E+06
OVERHEAD(\$)	.833E+05	.732E+05	.833E+05
LAND COST(\$)	.308E+05	.271E+05	.308E+05
CAPITAL COST(\$)	.947E+06	.833E+06	.947E+06
AMORTIZED(\$/YR)	.575E+05	.506E+05	.575E+05
LABOR(MAN-HR/YR)	.129E+00	.129E+00	.129E+00
LABOR COST(\$/YR)	.966E+00	.850E+00	.966E+00
SUPPLY COST(\$/YR)	.250E+04	.220E+04	.250E+04
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.250E+04	.220E+04	.250E+04
AVE ANNUAL(\$/YR)	.600E+05	.528E+05	.662E+05

LAND COST OVERRIDE USED .308E+05  
PERCENT DEPRECIATED 0.

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Upper Soquel Reservoir to Aptos-Soquel WTP  
(continued)

1978 WORTH OF	1980 PLANT COST	805612.		
1978 WORTH OF	2020 PLANT SALVAGE	12382.		
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS		24993.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS			30624.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	848848.		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		60313.		

1978 WORTH OF	1990 PLANT COST	424166.		
1978 WORTH OF	2020 PLANT SALVAGE	24764.		
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS		12174.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS			14917.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	426493.		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		30304.		

1978 WORTH OF	2000 PLANT COST	223329.		
1978 WORTH OF	2020 PLANT SALVAGE	37146.		
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS		5425.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS			6647.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	198254.		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		14087.		

1978 WORTH OF	2010 PLANT COST	117586.		
1978 WORTH OF	2020 PLANT SALVAGE	49528.		
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS		1871.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS			2293.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	72221.		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		5132.		

Upper Soquel Reservoir to Aptos-Soquel WTP  
(concluded)



FORCE MAIN 8  
GLENWOOD RES TO APTOS-SOQUEL W/T PLANT

DESIGN FACTORS  
NOMINAL PIPE DIAMETER .150E+02 INCHES  
PIPE LENGTH .305E+05 FEET  
MAXIMUM DESIGN FLOW .400E+01 MGD  
HIGH DAY DESIGN FLOW .400E+01 MGD  
AVERAGE DESIGN FLOW .400E+01 MGD  
MINIMUM DESIGN FLOW .400E+01 MGD  
VELOCITY AT MAXIMUM FLOW .504E+01 FPS  
VELOCITY AT AVERAGE FLOW .504E+01 FPS  
VELOCITY AT MINIMUM FLOW .504E+01 FPS

ENERGY CONSIDERATIONS  
INITIAL ELEVATION .400E+03 FEET  
FINAL ELEVATION .205E+03 FEET  
INITIAL PRESSURE HEAD 0 FEET  
FINAL PRESSURE HEAD .881E+01 FEET  
VELOCITY HEAD .395E+00 FEET  
DESIGN TEMPERATURE .200E+02 DEG C  
KINEMATIC VISCOSITY .108E-04 FEET\*\*2/SEC  
ROUGHNESS HEIGHT .100E-02 FEET  
FRICTION FACTOR .193E-01 FEET  
REYNOLDS NUMBER .582E+06  
FRICTION HEAD LOSS .186E+03 FEET  
MINOR HEAD LOSSES 0 FEET  
TOTAL HEAD LOSSES .186E+03 FEET  
THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW

CONSTRUCTION FACTORS  
DEPTH OF PIPE .500E+01 FEET  
OPEN COUNTRY .377E+02 PERCENT  
SPARSE ESTABLISHED RESIDENTIAL AREA .459E+02 PERCENT  
COMMERCIAL AREA .164E+02 PERCENT

ECONOMIC FACTORS  
YEAR CONSTRUCTED 1980 YEARS  
DESIGN LIFE .500E+02 YEARS  
INTEREST RATE .663E+01 PERCENT  
EPA SEWER CONSTRUCTION INDEX .305E+03 PERCENT  
CITY MULTIPLIER .114E+01  
WAGE O&M .750E+01

COST SUMMARY  
COST IN 1978 COST IN 1978 COST IN 1980  
DOLLARS DOLLARS DOLLARS  
BUILT IN 1978 BUILT IN 1980 BUILT IN 1980  
W/O. % INFLATION  
CONSTRUCTION(\$) .783E+06 .689E+06 .783E+06  
OVERHEAD(\$) .783E+05 .689E+05 .783E+05  
LAND COST(\$) .348E+05 .306E+05 .348E+05  
CAPITAL COST(\$) .896E+06 .788E+06 .896E+06  
AMORTIZED(\$/YR) .541E+05 .475E+05 .541E+05  
LABOR(MAN-HR/YR) .102E+00 .102E+00 .102E+00  
LABOR COST(\$/YR) .763E+00 .671E+00 .763E+00  
SUPPLY COST(\$/YR) .245E+04 .215E+04 .245E+04  
POWER(\$/YR) 0 0 0  
TOTAL O&M(\$/YR) .245E+04 .215E+04 .245E+04  
AVE ANNUAL(\$/YR) .565E+05 .497E+05 .642E+05

LAND COST OVERRIDE USED .348E+05  
PERCENT DEPRECIATED 0.

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1978 WORTH OF 1980 PLANT COST	757549.		
1978 WORTH OF 2020 PLANT SALVAGE	11643.		
1978 WORTH OF LAND USE FROM 1980 TO 2020 IS		28233.	
1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS			30011.
1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS		804149.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS	57137.		

1978 WORTH OF 1990 PLANT COST	398860.		
1978 WORTH OF 2020 PLANT SALVAGE	23287.		
1978 WORTH OF LAND USE FROM 1990 TO 2020 IS		13752.	
1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS			14618.
1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS		403943.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS	28701.		

1978 WORTH OF 2000 PLANT COST	210005.		
1978 WORTH OF 2020 PLANT SALVAGE	34930.		
1978 WORTH OF LAND USE FROM 2000 TO 2020 IS		6128.	
1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS			6514.
1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS		187717.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS	13338.		

1978 WORTH OF 2010 PLANT COST	110571.		
1978 WORTH OF 2020 PLANT SALVAGE	46574.		
1978 WORTH OF LAND USE FROM 2010 TO 2020 IS		2114.	
1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS			2247.
1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS		68357.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS	4857.		

Glenwood Reservoir to Aptos-Soquel WTP  
(concluded)

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ARMY ENGINEER WATERWAYS EXPERIMENT STATION VICKSBURG--ETC F/G 13/2  
APPLICATION OF MAPS TO THE SALINAS-MONTEREY URBAN STUDY. APPEND--ETC(U)  
AUG 79 T M WALSKI, A C GIBSON  
WES-EL-79-4-APP-B-F-6

UNCLASSIFIED

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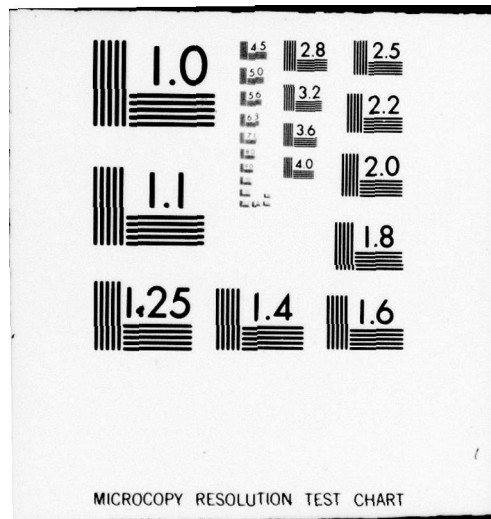
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FORCE MAIN 9  
APTOS-SOQUEL W/T PLANT TO SERVICE AREA

DESIGN FACTORS	
NOMINAL PIPE DIAMETER	.240E+02 INCHES
PIPE LENGTH	.405E+05 FEET
MAXIMUM DESIGN FLOW	.800E+01 MGD
HIGH DAY DESIGN FLOW	.800E+01 MGD
AVERAGE DESIGN FLOW	.800E+01 MGD
MINIMUM DESIGN FLOW	.800E+01 MGD
VELOCITY AT MAXIMUM FLOW	.394E+01 FPS
VELOCITY AT AVERAGE FLOW	.394E+01 FPS
VELOCITY AT MINIMUM FLOW	.394E+01 FPS

ENERGY CONSIDERATIONS	
INITIAL ELEVATION	.205E+03 FEET
FINAL ELEVATION	.115E+03 FEET
INITIAL PRESSURE HEAD	0. FEET
FINAL PRESSURE HEAD	.570E+01 FEET
VELOCITY HEAD	.241E+00 FEET
DESIGN TEMPERATURE	.200E+02 DEG C
KINEMATIC VISCOSITY	.108E-04 FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02 FEET
FRICTION FACTOR	.173E-01 FEET
REYNOLDS NUMBER	.727E+06
FRICTION HEAD LOSS	.843E+02 FEET
MINOR HEAD LOSSES	0. FEET
TOTAL HEAD LOSSES	.843E+02 FEET
THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW	

CONSTRUCTION FACTORS	
DEPTH OF PIPE	.500E+01 FEET
OPEN COUNTRY	.370E+02 PERCENT
NEW RESIDENTIAL AREA	.333E+02 PERCENT
SPARSE ESTABLISHED RESIDENTIAL AREA	.123E+02 PERCENT
DENSE ESTABLISHED RESIDENTIAL AREA	.148E+02 PERCENT
COMMERCIAL AREA	.250E+01 PERCENT

ECONOMIC FACTORS	
YEAR CONSTRUCTED	1980 YEARS
DESIGN LIFE	.500E+02 YEARS
INTEREST RATE	.663E+01 PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03 PERCENT
CITY MULTIPLIER	.114E+01
WAGE O&M	.750E+01

COST SUMMARY			
	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
			W/O. % INFLATION
CONSTRUCTION(\$)	.158E+07	.139E+07	.158E+07
OVERHEAD(\$)	.158E+06	.139E+06	.158E+06
LAND COST(\$)	.462E+05	.406E+05	.462E+05
CAPITAL COST(\$)	.178E+07	.157E+07	.178E+07
AMORTIZED(\$/YR)	.109E+06	.960E+05	.109E+06
LABOR(MAN-HR/YR)	.337E+00	.337E+00	.337E+00
LABOR COST(\$/YR)	.253E+01	.223E+01	.253E+01
SUPPLY COST(\$/YR)	.474E+04	.417E+04	.474E+04
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.474E+04	.417E+04	.474E+04
AVE ANNUAL(\$/YR)	.114E+06	.100E+06	.129E+06

LAND COST OVERRIDE USED	.462E+05
PERCENT DEPRECIATED	0.

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1978 WORTH OF	1980 PLANT COST	1529183.	
1978 WORTH OF	2020 PLANT SALVAGE	23503.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	37490.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		58112.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	1601281.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		113776.	

1978 WORTH OF	1990 PLANT COST	805135.	
1978 WORTH OF	2020 PLANT SALVAGE	47006.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	18261.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		28306.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	804696.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		57176.	

1978 WORTH OF	2000 PLANT COST	423915.	
1978 WORTH OF	2020 PLANT SALVAGE	70510.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	8137.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		12613.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	374155.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		26585.	

1978 WORTH OF	2010 PLANT COST	223197.	
1978 WORTH OF	2020 PLANT SALVAGE	94013.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	2807.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		4350.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	136341.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		9687.	

Aptos-Soquel WTP to Service Area  
(concluded)



FORCE MAIN 11  
PESCADERO RES TO WASTONVILLE

DESIGN FACTORS	
NOMINAL PIPE DIAMETER	.150E+02 INCHES
PIPE LENGTH	.515E+05 FEET
MAXIMUM DESIGN FLOW	.500E+01 MGD
HIGH DAY DESIGN FLOW	.500E+01 MGD
AVERAGE DESIGN FLOW	.500E+01 MGD
MINIMUM DESIGN FLOW	.500E+01 MGD
VELOCITY AT MAXIMUM FLOW	.630E+01 FPS
VELOCITY AT AVERAGE FLOW	.630E+01 FPS
VELOCITY AT MINIMUM FLOW	.630E+01 FPS

ENERGY CONSIDERATIONS	
INITIAL ELEVATION	.170E+03 FEET
FINAL ELEVATION	.120E+03 FEET
INITIAL PRESSURE HEAD	0. FEET
FINAL PRESSURE HEAD	-.441E+03 FEET
VELOCITY HEAD	.617E+00 FEET
DESIGN TEMPERATURE	.200E+02 DEG C
KINEMATIC VISCOSITY	.108E-04 FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02 FEET
FRICTION FACTOR	.193E-01 FEET
REYNOLDS NUMBER	.727E+06
FRICTION HEAD LOSS	.491E+03 FEET
MINOR HEAD LOSSES	0. FEET
TOTAL HEAD LOSSES	.491E+03 FEET
ADDITIONAL HEAD REQUIRED	.441E+03 FEET
THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW	

CONSTRUCTION FACTORS	
DEPTH OF PIPE	.500E+01 FEET
OPEN COUNTRY	.942E+02 PERCENT
COMMERCIAL AREA	.580E+01 PERCENT

ECONOMIC FACTORS	
YEAR CONSTRUCTED	1980 YEARS
DESIGN LIFE	.500E+02 YEARS
INTEREST RATE	.663E+01 PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03 PERCENT
CITY MULTIPLIER	.114E+01
WAGE O&M	.750E+01

COST SUMMARY			
	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O. % INFLATION
CONSTRUCTION(\$)	.142E+07	.125E+07	.142E+07
OVERHEAD(\$)	.142E+06	.125E+06	.142E+06
LAND COST(\$)	.587E+05	.516E+05	.587E+05
CAPITAL COST(\$)	.162E+07	.142E+07	.162E+07
AMORTIZED(\$/YR)	.979E+05	.861E+05	.979E+05
LABOR(MAN-HR/YR)	.169E+00	.169E+00	.169E+00
LABOR COST(\$/YR)	.127E+01	.112E+01	.127E+01
SUPPLY COST(\$/YR)	.413E+04	.364E+04	.413E+04
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.413E+04	.364E+04	.413E+04
AVE ANNUAL(\$/YR)	.102E+06	.898E+05	.116E+06

LAND COST OVERRIDE USED	.587E+05
PERCENT DEPRECIATED	0.

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Pescadero Reservoir to Watsonville WTP  
(continued)



1978 WORTH OF	1980 PLANT COST	1371977.	
1978 WORTH OF	2020 PLANT SALVAGE	21087.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	47672.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS	1449236.	50674.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		102972.	

1978 WORTH OF	1990 PLANT COST	722364.	
1978 WORTH OF	2020 PLANT SALVAGE	42174.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	23221.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS	728094.	24683.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		51733.	

1978 WORTH OF	2000 PLANT COST	380335.	
1978 WORTH OF	2020 PLANT SALVAGE	63261.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	10347.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS	338419.	10999.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		24046.	

1978 WORTH OF	2010 PLANT COST	200251.	
1978 WORTH OF	2020 PLANT SALVAGE	84348.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	3569.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS	123266.	3794.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		8758.	

Pescadero Reservoir to Watsonville WTP  
(concluded)

**FORCE MAIN 12  
CORNCOB-PAJARO TO WASTONVILLE W/T PLANT**

**DESIGN FACTORS**

NOMINAL PIPE DIAMETER	.180E+02 INCHES
PIPE LENGTH	.100E+05 FEET
MAXIMUM DESIGN FLOW	.500E+01 MGD
HIGH DAY DESIGN FLOW	.500E+01 MGD
AVERAGE DESIGN FLOW	.500E+01 MGD
MINIMUM DESIGN FLOW	.500E+01 MGD
VELOCITY AT MAXIMUM FLOW	.438E+01 FPS
VELOCITY AT AVERAGE FLOW	.438E+01 FPS
VELOCITY AT MINIMUM FLOW	.438E+01 FPS

**ENERGY CONSIDERATIONS**

INITIAL ELEVATION	.290E+02 FEET
FINAL ELEVATION	.100E+03 FEET
INITIAL PRESSURE HEAD	0. FEET
FINAL PRESSURE HEAD	.108E+03 FEET
VELOCITY HEAD	.298E+00 FEET
DESIGN TEMPERATURE	.200E+02 DEG C
KINEMATIC VISCOSITY	.108E-04 FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02 FEET
FRICTION FACTOR	.185E-01 FEET
REYNOLDS NUMBER	.606E+06
FRICTION HEAD LOSS	.367E+02 FEET
MINOR HEAD LOSSES	0. FEET
TOTAL HEAD LOSSES	.367E+02 FEET
ADDITIONAL HEAD REQUIRED	.108E+03 FEET

THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW

**CONSTRUCTION FACTORS**

DEPTH OF PIPE	.500E+01 FEET
OPEN COUNTRY	.881E+02 PERCENT
SPARSE ESTABLISHED RESIDENTIAL AREA	.710E+01 PERCENT
COMMERCIAL AREA	.480E+01 PERCENT

**ECONOMIC FACTORS**

YEAR CONSTRUCTED	1980 YEARS
DESIGN LIFE	.500E+02 YEARS
INTEREST RATE	.663E+01 PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03 PERCENT
CITY MULTIPLIER	.114E+01
WAGE O&M	.750E+01

**COST SUMMARY**

	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
			% INFLATION w/o.
CONSTRUCTION(\$)	.325E+06	.286E+06	.325E+06
OVERHEAD(\$)	.325E+05	.286E+05	.325E+05
LAND COST(\$)	.718E+05	.632E+05	.718E+05
CAPITAL COST(\$)	.429E+06	.377E+06	.429E+06
AMORTIZED(\$/YR)	.224E+05	.197E+05	.224E+05
LABOR(MAN-HR/YR)	.500E+01	.500E+01	.500E+01
LABOR COST(\$/YR)	.375E+00	.330E+00	.375E+00
SUPPLY COST(\$/YR)	.925E+03	.814E+03	.925E+03
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.925E+03	.814E+03	.925E+03
AVE ANNUAL(\$/YR)	.234E+05	.205E+05	.265E+05

LAND COST OVERRIDE USED .718E+05  
PERCENT DEPRECIATED 0.

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1978 WORTH OF	1980 PLANT COST	314282.		
1978 WORTH OF	2020 PLANT SALVAGE	4830.		
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS		58318.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS			11343.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS		379112.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		26937.		

1978 WORTH OF	1990 PLANT COST	165474.		
1978 WORTH OF	2020 PLANT SALVAGE	9661.		
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS		28406.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS			5525.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS		189744.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		13482.		

1978 WORTH OF	2000 PLANT COST	87124.		
1978 WORTH OF	2020 PLANT SALVAGE	14491.		
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS		12658.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS			2462.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS		87752.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		6235.		

1978 WORTH OF	2010 PLANT COST	45872.		
1978 WORTH OF	2020 PLANT SALVAGE	19322.		
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS		4366.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS			849.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS		31765.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		2257.		

Corncob-Pajaro to Watsonville WTP  
(concluded)



FORCE MAIN 13  
WADDELL RES TO SCOTT CREEK

DESIGN FACTORS

NOMINAL PIPE DIAMETER	.210E+02	INCHES
PIPE LENGTH	.505E+05	FEET
MAXIMUM DESIGN FLOW	.100E+02	MGD
HIGH DAY DESIGN FLOW	.100E+02	MGD
AVERAGE DESIGN FLOW	.100E+02	MGD
MINIMUM DESIGN FLOW	.100E+02	MGD
VELOCITY AT MAXIMUM FLOW	.643E+01	FPS
VELOCITY AT AVERAGE FLOW	.643E+01	FPS
VELOCITY AT MINIMUM FLOW	.643E+01	FPS

ENERGY CONSIDERATIONS

INITIAL ELEVATION	.360E+03	FEET
FINAL ELEVATION	.120E+03	FEET
INITIAL PRESSURE HEAD	0.	FEET
FINAL PRESSURE HEAD	.404E+02	FEET
VELOCITY HEAD	.642E+00	FEET
DESIGN TEMPERATURE	.200E+02	DEG C
KINEMATIC VISCOSITY	.108E-04	FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02	FEET
FRICTION FACTOR	.178E-01	FEET
REYNOLDS NUMBER	.104E+07	
FRICTION HEAD LOSS	.200E+03	FEET
MINOR HEAD LOSSES	0.	FEET
TOTAL HEAD LOSSES	.200E+03	FEET

THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW

CONSTRUCTION FACTORS

DEPTH OF PIPE	.500E+01	FEET
OPEN COUNTRY	.950E+02	PERCENT
COMMERCIAL AREA	.500E+01	PERCENT

ECONOMIC FACTORS

YEAR CONSTRUCTED	1980	YEARS
DESIGN LIFE	.500E+02	YEARS
INTEREST RATE	.663E+01	PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03	PERCENT
CITY MULTIPLIER	.114E+01	
WAGE O&M	.750E+01	

COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O. % INFLATION
CONSTRUCTION(\$)	.117E+07	.103E+07	.117E+07
OVERHEAD(\$)	.117E+06	.103E+06	.117E+06
LAND COST(\$)	.348E+05	.306E+05	.348E+05
CAPITAL COST(\$)	.132E+07	.116E+07	.132E+07
AMORTIZED(\$/YR)	.809E+05	.712E+05	.809E+05
LABOR(MAN-HR/YR)	.196E+00	.196E+00	.196E+00
LABOR COST(\$/YR)	.147E+01	.129E+01	.147E+01
SUPPLY COST(\$/YR)	.320E+04	.281E+04	.320E+04
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.320E+04	.281E+04	.320E+04
AVE ANNUAL(\$/YR)	.841E+05	.740E+05	.956E+05

LAND COST OVERRIDE USED .348E+05  
PERCENT DEPRECIATED 0.

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1978 WORTH OF	1980 PLANT COST	1134145.	
1978 WORTH OF	2020 PLANT SALVAGE	17432.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	28233.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		39178.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	1184125.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 84135.

1978 WORTH OF	1990 PLANT COST	597143.	
1978 WORTH OF	2020 PLANT SALVAGE	34863.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	13752.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		19084.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	595116.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 42285.

1978 WORTH OF	2000 PLANT COST	314404.	
1978 WORTH OF	2020 PLANT SALVAGE	52295.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	6128.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		8504.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	276741.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 19663.

1978 WORTH OF	2010 PLANT COST	165538.	
1978 WORTH OF	2020 PLANT SALVAGE	69726.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	2114.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		2933.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	100858.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 7166.

Waddell Creek Reservoir to Scott Creek  
(concluded)



**FORCE MAIN 14  
SCOTT CREEK RES TO PIPELINE**

**DESIGN FACTORS**

NOMINAL PIPE DIAMETER	.150E+02	INCHES
PIPE LENGTH	.185E+05	FEET
MAXIMUM DESIGN FLOW	.400E+01	MGD
HIGH DAY DESIGN FLOW	.400E+01	MGD
AVERAGE DESIGN FLOW	.400E+01	MGD
MINIMUM DESIGN FLOW	.400E+01	MGD
VELOCITY AT MAXIMUM FLOW	.504E+01	FPS
VELOCITY AT AVERAGE FLOW	.504E+01	FPS
VELOCITY AT MINIMUM FLOW	.504E+01	FPS

**ENERGY CONSIDERATIONS**

INITIAL ELEVATION	.240E+03	FEET
FINAL ELEVATION	.120E+03	FEET
INITIAL PRESSURE HEAD	0.	FEET
FINAL PRESSURE HEAD	.706E+01	FEET
VELOCITY HEAD	.395E+00	FEET
DESIGN TEMPERATURE	.200E+02	DEG C
KINEMATIC VISCOSITY	.108E-04	FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02	FEET
FRICTION FACTOR	.193E-01	FEET
REYNOLDS NUMBER	.582E+06	
FRICTION HEAD LOSS	.113E+03	FEET
MINOR HEAD LOSSES	0.	FEET
TOTAL HEAD LOSSES	.113E+03	FEET

THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW

**CONSTRUCTION FACTORS**

DEPTH OF PIPE	.500E+01	FEET
OPEN COUNTRY	.874E+02	PERCENT
SPARSE ESTABLISHED RESIDENTIAL AREA	.162E+02	PERCENT

**ECONOMIC FACTORS**

YEAR CONSTRUCTED	1980	YEARS
DESIGN LIFE	.500E+02	YEARS
INTEREST RATE	.663E+01	PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03	PERCENT
CITY MULTIPLIER	.114E+01	
WAGE O&M	.750E+01	

**COST SUMMARY**

	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
			W/O. % INFLATION
CONSTRUCTION(\$)	.499E+06	.439E+06	.499E+06
OVERHEAD(\$)	.499E+05	.439E+05	.499E+05
LAND COST(\$)	.211E+05	.186E+05	.211E+05
CAPITAL COST(\$)	.569E+06	.501E+06	.569E+06
AMORTIZED(\$/YR)	.344E+05	.303E+05	.344E+05
LABOR(MAN-HR/YR)	.632E-01	.632E-01	.632E-01
LABOR COST(\$/YR)	.474E+00	.417E+00	.474E+00
SUPPLY COST(\$/YR)	.148E+04	.131E+04	.148E+04
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.149E+04	.131E+04	.149E+04
AVE ANNUAL(\$/YR)	.359E+05	.316E+05	.408E+05

LAND COST OVERRIDE USED .211E+05  
PERCENT DEPRECIATED 0.

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Scott Creek Reservoir to North Coast Pipeline  
(continued)



1978 WORTH OF	1980 PLANT COST	482350.		
1978 WORTH OF	2020 PLANT SALVAGE	7414.		
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	17125.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS	510265.	18203.	
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		36256.		

1978 WORTH OF	1990 PLANT COST	253964.		
1978 WORTH OF	2020 PLANT SALVAGE	14827.		
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	8342.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS	256345.	8867.	
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		18214.		

1978 WORTH OF	2000 PLANT COST	133715.		
1978 WORTH OF	2020 PLANT SALVAGE	22241.		
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	3717.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS	119142.	3951.	
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		8465.		

1978 WORTH OF	2010 PLANT COST	70403.		
1978 WORTH OF	2020 PLANT SALVAGE	29655.		
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	1282.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS	43393.	1363.	
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		3083.		

Scott Creek Reservoir to North Coast Pipeline  
(concluded)

FORCE MAIN 17  
SAN VINCENTE TO PIPELINE

DESIGN FACTORS	
NOMINAL PIPE DIAMETER	.150E+02 INCHES
PIPE LENGTH	.500E+05 FEET
MAXIMUM DESIGN FLOW	.400E+01 MGD
HIGH DAY DESIGN FLOW	.400E+01 MGD
AVERAGE DESIGN FLOW	.400E+01 MGD
MINIMUM DESIGN FLOW	.400E+01 MGD
VELOCITY AT MAXIMUM FLOW	.504E+01 FPS
VELOCITY AT AVERAGE FLOW	.504E+01 FPS
VELOCITY AT MINIMUM FLOW	.504E+01 FPS

ENERGY CONSIDERATIONS	
INITIAL ELEVATION	.130E+03 FEET
FINAL ELEVATION	.700E+02 FEET
INITIAL PRESSURE HEAD	0. FEET
FINAL PRESSURE HEAD	-.245E+03 FEET
VELOCITY HEAD	.395E+00 FEET
DESIGN TEMPERATURE	.200E+02 DEG C
KINEMATIC VISCOSITY	.108E-04 FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02 FEET
FRICTION FACTOR	.193E-01 FEET
REYNOLDS NUMBER	.582E+06
FRICTION HEAD LOSS	.305E+03 FEET
MINOR HEAD LOSSES	0. FEET
TOTAL HEAD LOSSES	.305E+03 FEET
ADDITIONAL HEAD REQUIRED	.245E+03 FEET
THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW	

CONSTRUCTION FACTORS	
DEPTH OF PIPE	.500E+01 FEET
OPEN COUNTRY	.100E+03 PERCENT

ECONOMIC FACTORS	
YEAR CONSTRUCTED	1980 YEARS
DESIGN LIFE	.500E+02 YEARS
INTEREST RATE	.663E+01 PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03 PERCENT
CITY MULTIPLIER	.114E+01
WAGE O&M	.750E+01

COST SUMMARY			
	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
CONSTRUCTION(\$)	.138E+07	.121E+07	.138E+07
OVERHEAD(\$)	.138E+06	.121E+06	.138E+06
LAND COST(\$)	.570E+05	.501E+05	.570E+05
CAPITAL COST(\$)	.157E+07	.138E+07	.157E+07
AMORTIZED(\$/YR)	.952E+05	.837E+05	.952E+05
LABOR(MAN-HR/YR)	.165E+00	.165E+00	.165E+00
LABOR COST(\$/YR)	.123E+01	.109E+01	.123E+01
SUPPLY COST(\$/YR)	.401E+04	.353E+04	.401E+04
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.401E+04	.353E+04	.401E+04
AVE ANNUAL(\$/YR)	.992E+05	.873E+05	.113E+06

LAND COST OVERRIDE USED	
PERCENT DEPRECIATED	0.

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1978 WORTH OF	1980 PLANT COST	1334110.	
1978 WORTH OF	2020 PLANT SALVAGE	20505.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	46284.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		49198.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	1409086.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		100120.	

1978 WORTH OF	1990 PLANT COST	702427.	
1978 WORTH OF	2020 PLANT SALVAGE	41010.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	22545.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		23964.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	707926.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		50300.	

1978 WORTH OF	2000 PLANT COST	369837.	
1978 WORTH OF	2020 PLANT SALVAGE	61515.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	10046.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		10678.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	329046.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		23380.	

1978 WORTH OF	2010 PLANT COST	194724.	
1978 WORTH OF	2020 PLANT SALVAGE	82020.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	3465.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		3683.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	119852.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		8516.	

San Vicente Creek Diversion to North Coast Pipeline  
(concluded)



FORCE MAIN 21  
BALDWIN CREEK TO GORDOLA W/T PLANT

DESIGN FACTORS

NOMINAL PIPE DIAMETER	.150E+02	INCHES
PIPE LENGTH	.400E+04	FEET
MAXIMUM DESIGN FLOW	.400E+01	MGD
HIGH DAY DESIGN FLOW	.400E+01	MGD
AVERAGE DESIGN FLOW	.400E+01	MGD
MINIMUM DESIGN FLOW	.400E+01	MGD
VELOCITY AT MAXIMUM FLOW	.504E+01	FPS
VELOCITY AT AVERAGE FLOW	.504E+01	FPS
VELOCITY AT MINIMUM FLOW	.504E+01	FPS

ENERGY CONSIDERATIONS

INITIAL ELEVATION	.450E+02	FEET
FINAL ELEVATION	.190E+02	FEET
INITIAL PRESSURE HEAD	0.	FEET
FINAL PRESSURE HEAD	.158E+01	FEET
VELOCITY HEAD	.395E+00	FEET
DESIGN TEMPERATURE	.200E+02	DEG C
KINEMATIC VISCOSITY	.108E-04	FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02	FEET
FRICTION FACTOR	.193E-01	FEET
REYNOLDS NUMBER	.582E+06	
FRICTION HEAD LOSS	.244E+02	FEET
MINOR HEAD LOSSES	0.	FEET
TOTAL HEAD LOSSES	.244E+02	FEET

THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW

CONSTRUCTION FACTORS

DEPTH OF PIPE	.500E+01	FEET
OPEN COUNTRY	.100E+03	PERCENT

ECONOMIC FACTORS

YEAR CONSTRUCTED	1980	YEARS
DESIGN LIFE	.500E+02	YEARS
INTEREST RATE	.063E+01	PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03	PERCENT
CITY MULTIPLIER	.114E+01	
WAGE O&M	.750E+01	

COST SUMMARY

	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
			w/o. % INFLATION
CONSTRUCTION(\$)	.110E+06	.970E+05	.110E+06
OVERHEAD(\$)	.110E+05	.970E+04	.110E+05
LAND COST(\$)	.456E+04	.401E+04	.456E+04
CAPITAL COST(\$)	.126E+06	.111E+06	.126E+06
AMORTIZED(\$/YR)	.762E+04	.670E+04	.762E+04
LABOR(MAN-HR/YR)	.165E-01	.165E-01	.165E-01
LABOR COST(\$/YR)	.124E+00	.109E+00	.124E+00
SUPPLY COST(\$/YR)	.321E+03	.282E+03	.321E+03
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.321E+03	.282E+03	.321E+03
AVE ANNUAL(\$/YR)	.794E+04	.698E+04	.802E+04

LAND COST OVERRIDE USED .456E+04  
PERCENT DEPRECIATED 0.

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1978 WORTH OF	1980 PLANT COST	106729.		
1978 WORTH OF	2020 PLANT SALVAGE	1640.		
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	3703.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS	112727.	5936.	
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		8010.		

1978 WORTH OF	1990 PLANT COST	56194.		
1978 WORTH OF	2020 PLANT SALVAGE	3281.		
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	1804.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS	56634.	1917.	
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		4024.		

1978 WORTH OF	2000 PLANT COST	29587.		
1978 WORTH OF	2020 PLANT SALVAGE	4921.		
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	804.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS	26324.	854.	
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		1870.		

1978 WORTH OF	2010 PLANT COST	15578.		
1978 WORTH OF	2020 PLANT SALVAGE	6562.		
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	277.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS	9588.	295.	
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		681.		

Baldwin Creek Reservoir to Gordola WTP  
(concluded)



FORCE MAIN 25  
BEAR CREEK TO UPPER SAN LORENZO W/T PLA

DESIGN FACTORS	
NOMINAL PIPE DIAMETER	.150E+02 INCHES
PIPE LENGTH	.225E+05 FEET
MAXIMUM DESIGN FLOW	.500E+01 MGD
HIGH DAY DESIGN FLOW	.500E+01 MGD
AVERAGE DESIGN FLOW	.500E+01 MGD
MINIMUM DESIGN FLOW	.500E+01 MGD
VELOCITY AT MAXIMUM FLOW	.630E+01 FPS
VELOCITY AT AVERAGE FLOW	.630E+01 FPS
VELOCITY AT MINIMUM FLOW	.630E+01 FPS

ENERGY CONSIDERATIONS	
INITIAL ELEVATION	.460E+03 FEET
FINAL ELEVATION	.247E+03 FEET
INITIAL PRESSURE HEAD	0. FEET
FINAL PRESSURE HEAD	-.160E+01 FEET
VELOCITY HEAD	.617E+00 FEET
DESIGN TEMPERATURE	.200E+02 DEG C
KINEMATIC VISCOSITY	.108E-04 FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02 FEET
FRICTION FACTOR	.193E-01 FEET
REYNOLDS NUMBER	.727E+06
FRICTION HEAD LOSS	.215E+03 FEET
MINOR HEAD LOSSES	0. FEET
TOTAL HEAD LOSSES	.215E+03 FEET
ADDITIONAL HEAD REQUIRED	.160E+01 FEET
THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW	

CONSTRUCTION FACTORS	
DEPTH OF PIPE	.500E+01 FEET
OPEN COUNTRY	.289E+02 PERCENT
NEW RESIDENTIAL AREA	.670E+01 PERCENT
SPARSE ESTABLISHED RESIDENTIAL AREA	.578E+02 PERCENT
DENSE ESTABLISHED RESIDENTIAL AREA	.660E+01 PERCENT

ECONOMIC FACTORS	
YEAR CONSTRUCTED	1980 YEARS
DESIGN LIFE	.500E+02 YEARS
INTEREST RATE	.663E+01 PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03 PERCENT
CITY MULTIPLIER	.114E+01
WAGE O&M	.750E+01

COST SUMMARY			
	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
			W/O. % INFLATION
CONSTRUCTION(\$)	.554E+06	.488E+06	.554E+06
OVERHEAD(\$)	.554E+05	.488E+05	.554E+05
LAND COST(\$)	.770E+05	.677E+05	.770E+05
CAPITAL COST(\$)	.687E+06	.604E+06	.687E+06
AMORTIZED(\$/YR)	.383E+05	.337E+05	.383E+05
LABOR(MAN-HR/YR)	.760E+01	.760E+01	.760E+01
LABOR COST(\$/YR)	.570E+00	.502E+00	.570E+00
SUPPLY COST(\$/YR)	.181E+04	.159E+04	.181E+04
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.181E+04	.159E+04	.181E+04
AVE ANNUAL(\$/YR)	.401E+05	.353E+05	.456E+05

LAND COST OVERRIDE USED .257E+05  
PERCENT DEPRECIATED 0.

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1978 WORTH OF	1980 PLANT COST	536376.		
1978 WORTH OF	2020 PLANT SALVAGE	8244.		
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS		62483.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS			22139.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS		612754.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		43538.		

1978 WORTH OF	1990 PLANT COST	282409.		
1978 WORTH OF	2020 PLANT SALVAGE	16488.		
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS		30435.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS			10784.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS		307140.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		21823.		

1978 WORTH OF	2000 PLANT COST	148692.		
1978 WORTH OF	2020 PLANT SALVAGE	24732.		
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS		13562.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS			4805.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS		142327.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		10113.		

1978 WORTH OF	2010 PLANT COST	78288.		
1978 WORTH OF	2020 PLANT SALVAGE	32976.		
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS		4678.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS			1657.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS		51648.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		3670.		

Bear Creek Reservoir to Upper San Lorenzo WTP  
(concluded)

**FORCE MAIN 26  
CORNCOB TO PAJARO**

**DESIGN FACTORS**

NOMINAL PIPE DIAMETER	.450E+02 INCHES
PIPE LENGTH	.110E+05 FEET
MAXIMUM DESIGN FLOW	.200E+02 MGD
HIGH DAY DESIGN FLOW	.200E+02 MGD
AVERAGE DESIGN FLOW	.200E+02 MGD
MINIMUM DESIGN FLOW	.200E+02 MGD
VELOCITY AT MAXIMUM FLOW	.280E+01 FPS
VELOCITY AT AVERAGE FLOW	.280E+01 FPS
VELOCITY AT MINIMUM FLOW	.280E+01 FPS

**ENERGY CONSIDERATIONS**

INITIAL ELEVATION	.290E+02 FEET
FINAL ELEVATION	.150E+03 FEET
INITIAL PRESSURE HEAD	0. FEET
FINAL PRESSURE HEAD	.126E+03 FEET
VELOCITY HEAD	.122E+00 FEET
DESIGN TEMPERATURE	.200E+02 DEG C
KINEMATIC VISCOSITY	.108E-04 FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02 FEET
FRICTION FACTOR	.149E-01 FEET
REYNOLDS NUMBER	.970E+06
FRICTION HEAD LOSS	.533E+01 FEET
MINOR HEAD LOSSES	0. FEET
TOTAL HEAD LOSSES	.533E+01 FEET
ADDITIONAL HEAD REQUIRED	.126E+03 FEET
THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW	

**CONSTRUCTION FACTORS**

DEPTH OF PIPE	.500E+01 FEET
OPEN COUNTRY	.100E+03 PERCENT

**ECONOMIC FACTORS**

YEAR CONSTRUCTED	1980 YEARS
DESIGN LIFE	.500E+02 YEARS
INTEREST RATE	.663E+01 PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03 PERCENT
CITY MULTIPLIER	.114E+01
WAGE O&M	.750E+01

**COST SUMMARY**

	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS	
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980	
CONSTRUCTION(\$)	.106E+07	.931E+06	.106E+07	w/o. % INFLATION
OVERHEAD(\$)	.106E+06	.931E+05	.106E+06	
LAND COST(\$)	.180E+05	.158E+05	.180E+05	
CAPITAL COST(\$)	.118E+07	.104E+07	.118E+07	
AMORTIZED(\$/YR)	.731E+05	.643E+05	.731E+05	
LABOR(MAN-HR/YR)	.323E+00	.323E+00	.323E+00	
LABOR COST(\$/YR)	.242E+01	.213E+01	.242E+01	
SUPPLY COST(\$/YR)	.223E+04	.196E+04	.223E+04	
POWER(\$/YR)	0.	0.	0.	
TOTAL O&M(\$/YR)	.223E+04	.196E+04	.223E+04	
AVE ANNUAL(\$/YR)	.754E+05	.663E+05	.857E+05	

LAND COST OVERRIDE USED .180E+05  
PERCENT DEPRECIATED 0.

Pajaro River Diversion to Corncob Canyon Reservoir  
(continued)



1978 WORTH OF	1980 PLANT COST	1024648.	
1978 WORTH OF	2020 PLANT SALVAGE	15749.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	14626.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		27366.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	1050891.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		74669.	

1978 WORTH OF	1990 PLANT COST	539491.	
1978 WORTH OF	2020 PLANT SALVAGE	31497.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	7124.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		13330.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	528448.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		37548.	

1978 WORTH OF	2000 PLANT COST	284049.	
1978 WORTH OF	2020 PLANT SALVAGE	47246.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	3174.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		5940.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	245918.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		17473.	

1978 WORTH OF	2010 PLANT COST	149556.	
1978 WORTH OF	2020 PLANT SALVAGE	62995.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	1095.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		2049.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	89705.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		6374.	

Pajaro River Diversion to Corncob Canyon Reservoir  
(concluded)



FORCE MAIN 27  
BEAR CREEK TO FELTON PUMPING STATION

DESIGN FACTORS	
NOMINAL PIPE DIAMETER	.150E+02 INCHES
PIPE LENGTH	.540E+05 FEET
MAXIMUM DESIGN FLOW	.500E+01 MGD
HIGH DAY DESIGN FLOW	.500E+01 MGD
AVERAGE DESIGN FLOW	.500E+01 MGD
MINIMUM DESIGN FLOW	.500E+01 MGD
VELOCITY AT MAXIMUM FLOW	.630E+01 FPS
VELOCITY AT AVERAGE FLOW	.630E+01 FPS
VELOCITY AT MINIMUM FLOW	.630E+01 FPS

ENERGY CONSIDERATIONS	
INITIAL ELEVATION	.460E+03 FEET
FINAL ELEVATION	.370E+03 FEET
INITIAL PRESSURE HEAD	0. FEET
FINAL PRESSURE HEAD	-.425E+03 FEET
VELOCITY HEAD	.617E+00 FEET
DESIGN TEMPERATURE	.200E+02 DEG C
KINEMATIC VISCOSITY	.108E-04 FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02 FEET
FRICTION FACTOR	.193E-01 FEET
REYNOLDS NUMBER	.727E+06
FRICTION HEAD LOSS	.515E+03 FEET
MINOR HEAD LOSSES	0. FEET
TOTAL HEAD LOSSES	.515E+03 FEET
ADDITIONAL HEAD REQUIRED	.425E+03 FEET
THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW	

CONSTRUCTION FACTORS	
DEPTH OF PIPE	.500E+01 FEET
OPEN COUNTRY	.195E+02 PERCENT
NEW RESIDENTIAL AREA	.120E+02 PERCENT
SPARSE ESTABLISHED RESIDENTIAL AREA	.296E+02 PERCENT
DENSE ESTABLISHED RESIDENTIAL AREA	.389E+02 PERCENT

ECONOMIC FACTORS	
YEAR CONSTRUCTED	1980 YEARS
DESIGN LIFE	.500E+02 YEARS
INTEREST RATE	.663E+01 PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03 PERCENT
CITY MULTIPLIER	.114E+01
WAGE O&M	.750E+01

COST SUMMARY			
	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 w/o % INFLATION
CONSTRUCTION(\$)	.131E+07	.115E+07	.131E+07
OVERHEAD(\$)	.131E+06	.115E+06	.131E+06
LAND COST(\$)	.616E+05	.541E+05	.616E+05
CAPITAL COST(\$)	.151E+07	.132E+07	.151E+07
AMORTIZED(\$/YR)	.906E+05	.797E+05	.906E+05
LABOR(MAN-HR/YR)	.177E+00	.177E+00	.177E+00
LABOR COST(\$/YR)	.133E+01	.117E+01	.133E+01
SUPPLY COST(\$/YR)	.433E+04	.381E+04	.433E+04
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.434E+04	.381E+04	.434E+04
AVE ANNUAL(\$/YR)	.949E+05	.835E+05	.108E+06
LAND COST OVERRIDE USED .616E+05			
PERCENT DEPRECIATED 0.			
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1978 WORTH OF 1980 PLANT COST	1269803.		
1978 WORTH OF 2020 PLANT SALVAGE	19517.		
1978 WORTH OF LAND USE FROM 1980 TO 2020 IS	49987.		
1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS	1353407.	53133.	
1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS			

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 96163.

1978 WORTH OF 1990 PLANT COST	668569.		
1978 WORTH OF 2020 PLANT SALVAGE	39033.		
1978 WORTH OF LAND USE FROM 1990 TO 2020 IS	24348.		
1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS	679765.	25881.	
1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS			

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 48299.

1978 WORTH OF 2000 PLANT COST	352011.		
1978 WORTH OF 2020 PLANT SALVAGE	58550.		
1978 WORTH OF LAND USE FROM 2000 TO 2020 IS	10849.		
1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS	315843.	11532.	
1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS			

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 22442.

1978 WORTH OF 2010 PLANT COST	185338.		
1978 WORTH OF 2020 PLANT SALVAGE	78067.		
1978 WORTH OF LAND USE FROM 2010 TO 2020 IS	3742.		
1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS	114992.	3978.	
1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS			

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 8170.

Bear Creek Reservoir to Felton Pumping Station  
(concluded)



FORCE MAIN 28  
APTOS RES TO APTOS-SOQUEL W/T PLANT

DESIGN FACTORS	
NOMINAL PIPE DIAMETER	.150E+02 INCHES
PIPE LENGTH	.125E+05 FEET
MAXIMUM DESIGN FLOW	.400E+01 MGD
HIGH DAY DESIGN FLOW	.400E+01 MGD
AVERAGE DESIGN FLOW	.400E+01 MGD
MINIMUM DESIGN FLOW	.400E+01 MGD
VELOCITY AT MAXIMUM FLOW	.504E+01 FPS
VELOCITY AT AVERAGE FLOW	.504E+01 FPS
VELOCITY AT MINIMUM FLOW	.504E+01 FPS

ENERGY CONSIDERATIONS	
INITIAL ELEVATION	.370E+03 FEET
FINAL ELEVATION	.800E+03 FEET
INITIAL PRESSURE HEAD	0 FEET
FINAL PRESSURE HEAD	.506E+03 FEET
VELOCITY HEAD	.395E+00 FEET
DESIGN TEMPERATURE	.200E+02 DEG C
KINEMATIC VISCOSITY	.108E-04 FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02 FEET
FRICTION FACTOR	.193E-01 FEET
REYNOLDS NUMBER	.582E+06
FRICTION HEAD LOSS	.763E+02 FEET
MINOR HEAD LOSSES	0 FEET
TOTAL HEAD LOSSES	.763E+02 FEET
ADDITIONAL HEAD REQUIRED	.506E+03 FEET
THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW	

CONSTRUCTION FACTORS	
DEPTH OF PIPE	.500E+01 FEET
OPEN COUNTRY	.800E+02 PERCENT
SPARSE ESTABLISHED RESIDENTIAL AREA	.160E+02 PERCENT
COMMERCIAL AREA	.400E+01 PERCENT

ECONOMIC FACTORS	
YEAR CONSTRUCTED	1980 YEARS
DESIGN LIFE	.500E+02 YEARS
INTEREST RATE	.663E+01 PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03 PERCENT
CITY MULTIPLIER	.114E+01
WAGE O&M	.750E+01

COST SUMMARY			
	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
CONSTRUCTION(\$)	.337E+06	.296E+06	.337E+06
OVERHEAD(\$)	.337E+05	.296E+05	.337E+05
LAND COST(\$)	.143E+05	.125E+05	.143E+05
CAPITAL COST(\$)	.384E+06	.338E+06	.384E+06
AMORTIZED(\$/YR)	.232E+05	.204E+05	.232E+05
LABOR(MAN-HR/YR)	.438E+01	.438E+01	.438E+01
LABOR COST(\$/YR)	.329E+00	.289E+00	.329E+00
SUPPLY COST(\$/YR)	.100E+04	.882E+03	.100E+04
POWER(\$/YR)	0	0	0
TOTAL O&M(\$/YR)	.100E+04	.883E+03	.100E+04
AVE ANNUAL(\$/YR)	.242E+05	.213E+05	.276E+05

LAND COST OVERRIDE USED	.143E+05
PERCENT DEPRECIATED	0

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Aptos Creek Reservoir to Aptos-Soquel WTP



1978 WORTH OF	1980 PLANT COST	325645.		
1978 WORTH OF	2020 PLANT SALVAGE	5005.		
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS		11571.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS			12300.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	344511.		

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 24478.

1978 WORTH OF	1990 PLANT COST	171457.		
1978 WORTH OF	2020 PLANT SALVAGE	10010.		
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS		5636.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS			5991.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	173074.		

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 12297.

1978 WORTH OF	2000 PLANT COST	90274.		
1978 WORTH OF	2020 PLANT SALVAGE	15015.		
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS		2511.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS			2670.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	80440.		

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 5715.

1978 WORTH OF	2010 PLANT COST	47531.		
1978 WORTH OF	2020 PLANT SALVAGE	20020.		
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS		866.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS			921.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	29297.		

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 2082.

Aptos Creek Reservoir to Aptos-Soquel WTP

**FORCE MAIN 29  
PAJARO TO PESCADERO**

**DESIGN FACTORS**

NOMINAL PIPE DIAMETER	.300E+02 INCHES
PIPE LENGTH	.158E+05 FEET
MAXIMUM DESIGN FLOW	.200E+02 MGD
HIGH DAY DESIGN FLOW	.200E+02 MGD
AVERAGE DESIGN FLOW	.200E+02 MGD
MINIMUM DESIGN FLOW	.200E+02 MGD
VELOCITY AT MAXIMUM FLOW	.630E+01 FPS
VELOCITY AT AVERAGE FLOW	.630E+01 FPS
VELOCITY AT MINIMUM FLOW	.630E+01 FPS

**ENERGY CONSIDERATIONS**

INITIAL ELEVATION	.270E+03 FEET
FINAL ELEVATION	.160E+03 FEET
INITIAL PRESSURE HEAD	0. FEET
FINAL PRESSURE HEAD	.460E+02 FEET
VELOCITY HEAD	.617E+00 FEET
DESIGN TEMPERATURE	.200E+02 DEG C
KINEMATIC VISCOSITY	.108E-04 FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02 FEET
FRICTION FACTOR	.164E-01 FEET
REYNOLDS NUMBER	.145E+07
FRICTION HEAD LOSS	.640E+02 FEET
MINOR HEAD LOSSES	0. FEET
TOTAL HEAD LOSSES	.640E+02 FEET

THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW

**CONSTRUCTION FACTORS**

DEPTH OF PIPE	.500E+01 FEET
OPEN COUNTRY	.100E+03 PERCENT

**ECONOMIC FACTORS**

YEAR CONSTRUCTED	1980 YEARS
DESIGN LIFE	.500E+02 YEARS
INTEREST RATE	.663E+01 PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03 PERCENT
CITY MULTIPLIER	.114E+01
WAGE O&M	.750E+01

**COST SUMMARY**

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O. % INFLATION
CONSTRUCTION(\$)	.911E+06	.801E+06	.911E+06
OVERHEAD(\$)	.911E+05	.801E+05	.911E+05
LAND COST(\$)	.180E+05	.158E+05	.180E+05
CAPITAL COST(\$)	.102E+07	.897E+06	.102E+07
AMORTIZED(\$/YR)	.629E+05	.553E+05	.629E+05
LABOR(MAN-HR/YR)	.208E+00	.208E+00	.208E+00
LABOR COST(\$/YR)	.156E+01	.137E+01	.156E+01
SUPPLY COST(\$/YR)	.224E+04	.197E+04	.224E+04
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.224E+04	.197E+04	.224E+04
AVE ANNUAL(\$/YR)	.651E+05	.573E+05	.740E+05

LAND COST OVERRIDE USED .180E+05  
PERCENT DEPRECIATED 0.

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Pajaro River to Pescadero Creek Reservoir  
(continued)



1978 WORTH OF	1980 PLANT COST	881248.		
1978 WORTH OF	2020 PLANT SALVAGE	13545.		
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS		14626.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS			27492.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS		909821.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		64645.		

1978 WORTH OF	1990 PLANT COST	463989.		
1978 WORTH OF	2020 PLANT SALVAGE	27089.		
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS		7124.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS			13391.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS		457415.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		32501.		

1978 WORTH OF	2000 PLANT COST	244297.		
1978 WORTH OF	2020 PLANT SALVAGE	40634.		
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS		3174.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS			5967.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS		212804.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		15120.		

1978 WORTH OF	2010 PLANT COST	128625.		
1978 WORTH OF	2020 PLANT SALVAGE	54178.		
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS		1095.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS			2058.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS		77600.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		5514.		

Pajaro River to Pescadero Creek Reservoir  
(concluded)



FORCE MAIN 31  
 ???

DESIGN FACTORS	
NOMINAL PIPE DIAMETER	.450E+02 INCHES
PIPE LENGTH	.360E+05 FEET
MAXIMUM DESIGN FLOW	.200E+02 MGD
HIGH DAY DESIGN FLOW	.200E+02 MGD
AVERAGE DESIGN FLOW	.200E+02 MGD
MINIMUM DESIGN FLOW	.200E+02 MGD
VELOCITY AT MAXIMUM FLOW	.280E+01 FPS
VELOCITY AT AVERAGE FLOW	.280E+01 FPS
VELOCITY AT MINIMUM FLOW	.280E+01 FPS

ENERGY CONSIDERATIONS	
INITIAL ELEVATION	.450E+02 FEET
FINAL ELEVATION	.100E+03 FEET
INITIAL PRESSURE HEAD	0. FEET
FINAL PRESSURE HEAD	-.724E+02 FEET
VELOCITY HEAD	.122E+00 FEET
DESIGN TEMPERATURE	.200E+02 DEG C
KINEMATIC VISCOSITY	.108E-04 FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02 FEET
FRICTION FACTOR	.149E-01 FEET
REYNOLDS NUMBER	.970E+06
FRICTION HEAD LOSS	.174E+02 FEET
MINOR HEAD LOSSES	0. FEET
TOTAL HEAD LOSSES	.174E+02 FEET
ADDITIONAL HEAD REQUIRED	.724E+02 FEET
THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW	

CONSTRUCTION FACTORS	
DEPTH OF PIPE	.500E+01 FEET
OPEN COUNTRY	.100E+03 PERCENT

ECONOMIC FACTORS	
YEAR CONSTRUCTED	1980 YEARS
DESIGN LIFE	.500E+02 YEARS
INTEREST RATE	.063E+01 PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03 PERCENT
CITY MULTIPLIER	.114E+01
WAGE O&M	.750E+01

COST SUMMARY			
	COST IN 1978	COST IN 1978	COST IN 1980
	DOLLARS	DOLLARS	DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
			w/o. % INFLATION
CONSTRUCTION(\$)	.347E+07	.305E+07	.347E+07
OVERHEAD(\$)	.347E+06	.305E+06	.347E+06
LAND COST(\$)	.410E+05	.361E+05	.410E+05
CAPITAL COST(\$)	.385E+07	.339E+07	.385E+07
AMORTIZED(\$/YR)	.239E+06	.210E+06	.239E+06
LABOR(MAN-HR/YR)	.105E+01	.105E+01	.105E+01
LABOR COST(\$/YR)	.785E+01	.691E+01	.785E+01
SUPPLY COST(\$/YR)	.730E+04	.642E+04	.730E+04
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.731E+04	.643E+04	.731E+04
AVE ANNUAL(\$/YR)	.247E+06	.217E+06	.280E+06

LAND COST OVERRIDE USED .410E+05  
 PERCENT DEPRECIATED 0.

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North Coast Pipeline when Waddell Creek and Scott Creek Reservoirs Built  
 (portion from Scott Creek to Gordola WTP)  
 (continued)

1978 WORTH OF	1980 PLANT COST	3353394.	
1978 WORTH OF	2020 PLANT SALVAGE	51541.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	33324.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		89560.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	3424737.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 243337.

1978 WORTH OF	1990 PLANT COST	1765607.	
1978 WORTH OF	2020 PLANT SALVAGE	103082.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	16232.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		43625.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	1722382.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 122380.

1978 WORTH OF	2000 PLANT COST	929616.	
1978 WORTH OF	2020 PLANT SALVAGE	154623.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	7233.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		19439.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	801665.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 56961.

1978 WORTH OF	2010 PLANT COST	489456.	
1978 WORTH OF	2020 PLANT SALVAGE	206164.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	2495.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		6705.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	292491.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 20782.

North Coast Pipeline when Waddell Creek and Scott Creek Reservoirs Built  
(portion from Scott Creek to Gordola WTP)  
(concluded)



FORCE MAIN 31  
 ???

DESIGN FACTORS	
NOMINAL PIPE DIAMETER	.300E+02 INCHES
PIPE LENGTH	.360E+05 FEET
MAXIMUM DESIGN FLOW	.100E+02 MGD
HIGH DAY DESIGN FLOW	.100E+02 MGD
AVERAGE DESIGN FLOW	.100E+02 MGD
MINIMUM DESIGN FLOW	.100E+02 MGD
VELOCITY AT MAXIMUM FLOW	.315E+01 FPS
VELOCITY AT AVERAGE FLOW	.315E+01 FPS
VELOCITY AT MINIMUM FLOW	.315E+01 FPS

ENERGY CONSIDERATIONS	
INITIAL ELEVATION	.450E+02 FEET
FINAL ELEVATION	.100E+03 FEET
INITIAL PRESSURE HEAD	0. FEET
FINAL PRESSURE HEAD	-.914E+02 FEET
VELOCITY HEAD	.154E+00 FEET
DESIGN TEMPERATURE	.200E+02 DEG C
KINEMATIC VISCOSITY	.108E-04 FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02 FEET
FRICTION FACTOR	.164E-01 FEET
REYNOLDS NUMBER	.727E+06
FRICTION HEAD LOSS	.364E+02 FEET
MINOR HEAD LOSSES	0. FEET
TOTAL HEAD LOSSES	.364E+02 FEET
ADDITIONAL HEAD REQUIRED	.914E+02 FEET
THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW	

CONSTRUCTION FACTORS	
DEPTH OF PIPE	.500E+01 FEET
OPEN COUNTRY	.100E+03 PERCENT

ECONOMIC FACTORS	
YEAR CONSTRUCTED	1980 YEARS
DESIGN LIFE	.500E+02 YEARS
INTEREST RATE	.663E+01 PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03 PERCENT
CITY MULTIPLIER	.114E+01
WAGE O&M	.750E+01

COST SUMMARY			
	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 w/o. % INFLATION
CONSTRUCTION(\$)	.207E+07	.182E+07	.207E+07
OVERHEAD(\$)	.207E+06	.182E+06	.207E+06
LAND COST(\$)	.410E+05	.361E+05	.410E+05
CAPITAL COST(\$)	.232E+07	.204E+07	.232E+07
AMORTIZED(\$/YR)	.143E+06	.126E+06	.143E+06
LABOR(MAN-HR/YR)	.467E+00	.467E+00	.467E+00
LABOR COST(\$/YR)	.350E+01	.308E+01	.350E+01
SUPPLY COST(\$/YR)	.509E+04	.448E+04	.509E+04
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.510E+04	.448E+04	.510E+04
AVE ANNUAL(\$/YR)	.148E+06	.130E+06	.168E+06

LAND COST OVERRIDE USED	.410E+05
PERCENT DEPRECIATED	0.

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North Coast Pipeline when only Waddell Creek or Scott Creek Reservoir Built  
 (portion from Scott Creek to Gordola WTP)  
 (continued).



1978 WORTH OF 1980 PLANT COST	2002837.	
1978 WORTH OF 2020 PLANT SALVAGE	30783.	
1978 WORTH OF LAND USE FROM 1980 TO 2020 IS	33324.	
1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS	2067859.	62481.
1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 146927.		

1978 WORTH OF 1990 PLANT COST	1054521.	
1978 WORTH OF 2020 PLANT SALVAGE	61566.	
1978 WORTH OF LAND USE FROM 1990 TO 2020 IS	16232.	
1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS	1039621.	30434.
1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 73868.		

1978 WORTH OF 2000 PLANT COST	555220.	
1978 WORTH OF 2020 PLANT SALVAGE	92350.	
1978 WORTH OF LAND USE FROM 2000 TO 2020 IS	7233.	
1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS	483664.	13561.
1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 34366.		

1978 WORTH OF 2010 PLANT COST	292331.	
1978 WORTH OF 2020 PLANT SALVAGE	123133.	
1978 WORTH OF LAND USE FROM 2010 TO 2020 IS	2495.	
1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS	176370.	4677.
1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 12532.		

North Coast Pipeline when only Waddell Creek or Scott Creek Reservoir Built  
 (portion from Scott Creek to Gordola WTP)  
 (concluded)

## APPENDIX G: DESIGN AND COST PARAMETERS FOR MONTEREY COUNTY

1. This appendix contains design and cost estimates for the facilities required for Monterey County. Each facility has two pages of information: the first consists of the design parameters and cost summary; the second consists of a breakdown of the costs according to individual components of the facilities. These values were used in preparing Table 2 in the text.

2. The Arroya Seco Reservoir (MA)\* facilities are shown first, followed by the Carmel River Reservoir (MB), Castroville Irrigation Project (MC), East Side Project (MD), Carmel Valley Wells (MP), and Reservoir Tunnel Project (MG).

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\* MA = Monterey A, etc.

# Arroyo Seco Dam (MA)

RESERVOIR NO. 20  
TITLE ARROYO SECO DAM (MA)  
EARTH FILLED  
AREA  
INITIAL POOL ELEVATION  
MAXIMUM POOL HEIGHT  
MINIMUM POOL HEIGHT  
RELEASE

.217E+03 ACRES  
.555E+03 FEET  
.555E+03 FEET  
.46E+03 FEET  
0. MGD

ECONOMIC FACTORS  
YEAR CONSTRUCTED  
DESIGN LIFE  
INTEREST RATE  
ENR CONSTRUCTION INDEX  
CITY MULTIPLIER

1980 YEAR  
50 YEARS  
.663E+01 PERCENT  
.268E+04  
.114E+01

## COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 w/o. % INFLATION
CONSTRUCTION(\$)	.158E+08	.139E+08	.158E+08
OVERHEAD(\$)	.158E+07	.139E+07	.158E+07
CAPITAL COST(\$)	.174E+08	.153E+08	.174E+08
AMORTIZED(\$/YR)	.120E+07	.106E+07	.120E+07
LABOR(MAN-HR/YR)	0.	0.	0.
LABOR COST(\$/YR)	0.	0.	0.
SUPPLY COST(\$/YR)	.479E+05	.421E+05	.479E+05
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.479E+05	.421E+05	.479E+05
AVE ANNUAL(\$/YR)	.125E+07	.110E+07	.142E+07

PERCENT DEPRECIATED

0.

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# Arroyo Seco Dam (MA)

1978 WORTH OF 1980 PLANT COST 15287332.  
 1978 WORTH OF 2020 PLANT SALVAGE 234963.  
 1978 WORTH OF LAND USE FROM 1980 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS 587089.  
 1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS 15639458.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 1111229.

1978 WORTH OF 1990 PLANT COST 8048988.  
 1978 WORTH OF 2020 PLANT SALVAGE 469927.  
 1978 WORTH OF LAND USE FROM 1990 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS 285970.  
 1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS 7865031.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 558833.

1978 WORTH OF 2000 PLANT COST 4237902.  
 1978 WORTH OF 2020 PLANT SALVAGE 704890.  
 1978 WORTH OF LAND USE FROM 2000 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS 127426.  
 1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS 3660438.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 260085.

1978 WORTH OF 2010 PLANT COST 2231313.  
 1978 WORTH OF 2020 PLANT SALVAGE 939853.  
 1978 WORTH OF LAND USE FROM 2010 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS 43951.  
 1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS 1335411.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 94885.

# Carmel River Reservoir (MB)

RESERVOIR NO. 21  
 TITLE CARMEL RIVER DAM (MB)  
 CONCRETE FILLED  
 AREA  
 INITIAL POOL ELEVATION  
 MAXIMUM POOL HEIGHT  
 MINIMUM POOL HEIGHT  
 RELEASE

.401E+03 ACRES  
 .843E+03 FEET  
 .843E+03 FEET  
 .600E+03 FEET  
 0. MGD

ECONOMIC FACTORS  
 YEAR CONSTRUCTED  
 DESIGN LIFE  
 INTEREST RATE  
 ENR CONSTRUCTION INDEX  
 CITY MULTIPLIER

1980 YEAR  
 50 YEARS  
 .663E+01 PERCENT  
 .268E+04  
 .114E+01

## COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O. % INFLATION
CONSTRUCTION(\$)	.963E+08	.847E+08	.963E+08
OVERHEAD(\$)	.963E+07	.847E+07	.963E+07
CAPITAL COST(\$)	.106E+09	.932E+08	.106E+09
AMORTIZED(\$/YR)	.731E+07	.643E+07	.731E+07
LABOR(MAN-HR/YR) 0.	0.	0.	0.
LABOR COST(\$/YR) 0.	0.	0.	0.
SUPPLY COST(\$/YR)	.851E+05	.749E+05	.851E+05
POWER(\$/YR) 0.	0.	0.	0.
TOTAL O&M(\$/YR)	.851E+05	.749E+05	.851E+05
AVE ANNUAL(\$/YR)	.740E+07	.651E+07	.841E+07

PERCENT DEPRECIATED

0.

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Carmel River Reservoir (MB)

1978 WORTH OF 1980 PLANT COST 93175318.  
1978 WORTH OF 2020 PLANT SALVAGE 1432087.  
1978 WORTH OF LAND USE FROM 1980 TO 2020 IS 0.  
1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS 1043034.  
1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS 92786265.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 6592732.

1978 WORTH OF 1990 PLANT COST 49058073.  
1978 WORTH OF 2020 PLANT SALVAGE 2864173.  
1978 WORTH OF LAND USE FROM 1990 TO 2020 IS 0.  
1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS 508059.  
1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS 46701959.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 3318309.

1978 WORTH OF 2000 PLANT COST 25829744.  
1978 WORTH OF 2020 PLANT SALVAGE 4296260.  
1978 WORTH OF LAND USE FROM 2000 TO 2020 IS 0.  
1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS 226388.  
1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS 21759872.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 1546102.

1978 WORTH OF 2010 PLANT COST 13599713.  
1978 WORTH OF 2020 PLANT SALVAGE 5728347.  
1978 WORTH OF LAND USE FROM 2010 TO 2020 IS 0.  
1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS 78084.  
1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS 7949450.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 564831.



# Castroville Diversion to Pumping Station (MC)

## OPEN CHANNEL 7 CASTROVILLE DIVERSION TO PUMP STATION

TRAPEZOIDAL CHANNEL  
EARTH LINED CHANNEL  
ANGLE SIDE MAKES W/HORIZONTAL .450E+02 DEGREES  
LENGTH OF SIDES .222E+01 FEET  
WIDTH OF CHANNEL AT WATER SURFACE .714E+01 FEET  
WIDTH OF CHANNEL BOTTOM .400E+01 FEET  
CHANNEL CONVEYANCE .319E+00  
MAXIMUM FLOW .400E+02 MGD  
FLOW DURING HIGH PERIOD .400E+02 MGD  
AVERAGE FLOW .400E+02 MGD  
MINIMUM FLOW .400E+02 MGD  
SLOPE .600E-02 FT/FT  
LENGTH .250E+04 FEET  
NORMAL DEPTH AT PEAK FLOW .157E+01 FEET  
VELOCITY AT PEAK FLOW .457E+01 FPS  
VELOCITY AT AVERAGE FLOW .457E+01 FPS  
INITIAL ELEVATION .230E+03 FEET  
FINAL ELEVATION .215E+03 FEET  
TOTAL HEAD INITIAL .232E+03 FEET  
TOTAL HEAD FINAL .217E+03 FEET  
WETTED PERIMETER .845E+01 FEET  
FREEBOARD 0. FEET  
TOTAL CHANNEL PERIMETER .845E+01 FEET  
EARTH MOVED .147E+04 CU YD  
SPECIFIC ENERGY .190E+01 FEET  
FROUDE NUMBER AT PEAK FLOW .642E+00  
MANNINGS N .250E-01  
DESIGNS ASSUME STEADY, UNIFORM FLOW

CONSTRUCTION FACTORS  
EXCAVATION IN ROCK 0. PERCENT  
WIDTH OF RIGHT OF WAY 0. FEET  
LAND REQUIRED 0. ACRES

ECONOMIC FACTORS  
EPA SEWER CONSTRUCTION INDEX .305E+03  
O&M WAGEDOM RATE .750E+01 DOLLARS/HOUR  
INTEREST RATE .663E+01 PERCENT  
CITY MULTIPLIER .114E+01  
DESIGN LIFE 50 YEARS  
YEAR BUILT 1980 YEAR

## COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 w/o. % INFLATION
CONSTRUCTION(\$)	.176E+04	.155E+04	.176E+04
OVERHEAD(\$)	.176E+03	.155E+03	.176E+03
LAND COST(\$)	.345E+04	.303E+04	.345E+04
CAPITAL COST(\$)	.539E+04	.474E+04	.539E+04
AMORTIZED(\$/YR)	.372E+03	.327E+03	.372E+03
LABOR(MAN-HR/YR)	.136E+02	.136E+02	.136E+02
LABOR COST(\$/YR)	.102E+03	.894E+02	.102E+03
SUPPLY COST(\$/YR)	.628E+03	.552E+03	.628E+03
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.750E+03	.642E+03	.730E+03
AVE ANNUAL(\$/YR)	.110E+04	.969E+03	.125E+04

LAND COST OVERRIDE USED .345E+04  
PERCENT DEPRECIATED 0.

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# Castroville Diversion to Pumping Station (MC)

1978 WORTH OF	1980 PLANT COST	1703.		
1978 WORTH OF	2020 PLANT SALVAGE	26.		
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS		2801.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		12347.	7869.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		877.		

1978 WORTH OF	1990 PLANT COST	897.		
1978 WORTH OF	2020 PLANT SALVAGE	52.		
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS		1365.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		6042.	3833.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		429.		

1978 WORTH OF	2000 PLANT COST	472.		
1978 WORTH OF	2020 PLANT SALVAGE	79.		
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS		608.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		2709.	1708.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		193.		

1978 WORTH OF	2010 PLANT COST	249.		
1978 WORTH OF	2020 PLANT SALVAGE	105.		
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS		210.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		943.	589.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		67.		



# Castroville Pumping Station (MC)

## PUMPING STATION 11

### CASTROVILLE PUMPING STATION (MC)

PUMP HEAD	.930E+02	FEET
PUMP POWER	.109E+04	HORSEPOWER
ELECTRICAL USAGE	.267E+07	KWHR/YEAR
MAXIMUM DESIGN FLOW	.400E+02	MGD
HIGH DAY DESIGN FLOW	.250E+02	MGD
AVERAGE DESIGN FLOW	.150E+02	MGD
MINIMUM DESIGN FLOW	.100E+02	MGD
OVERALL EFFICIENCY	.600E+02	PERCENT
INITIAL ELEVATION	.500E+02	FEET
FINAL ELEVATION	.400E+01	FEET
INITIAL PRESSURE HEAD	0.	FEET
FINAL PRESSURE HEAD	.139E+03	FEET
INITIAL TOTAL HEAD	.500E+02	FEET
FINAL TOTAL HEAD	.143E+03	FEET

### ECONOMIC FACTORS

CITY MULTIPLIER	.114E+01	
DESIGN LIFE	20	YEARS
INTEREST RATE	.663E+01	PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03	
AVERAGE O&M WAGEOM	.750E+01	DOLLARS/HOUR
COST OF ELECTRICITY	.500E+01	DOLLARS/KWHR

### COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O, % INFLATION
CONSTRUCTION(\$)	.135E+07	.119E+07	.135E+07
OVERHEAD(\$)	.135E+06	.119E+06	.135E+06
CAPITAL COST(\$)	.149E+07	.131E+07	.149E+07
AMORTIZED(\$/YR)	.137E+06	.120E+06	.137E+06
LABOR(MAN-HR/YR)	.181E+04	.181E+04	.181E+04
LABOR COST(\$/YR)	.136E+05	.119E+05	.136E+05
SUPPLY COST(\$/YR)	.306E+04	.269E+04	.306E+04
POWER(\$/YR)	.133E+06	.117E+06	.133E+06
TOTAL O&M(\$/YR)	.150E+06	.132E+06	.150E+06
AVE ANNUAL(\$/YR)	.287E+06	.252E+06	.326E+06

PERCENT DEPRECIATED 0.

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# Castroville Pumping Station (MC)

1978 WORTH OF	1980 PLANT COST	1306196.	
1978 WORTH OF	2000 PLANT COST	362099.	
1978 WORTH OF	2020 PLANT COST	100380.	
1978 WORTH OF	2020 PLANT SALVAGE	100380.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		1838485
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	3506780.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		249167.	

1978 WORTH OF	1990 PLANT COST	687730.	
1978 WORTH OF	2010 PLANT COST	190650.	
1978 WORTH OF	2020 PLANT SALVAGE	50190.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		895521
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	1723712.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		122475.	

1978 WORTH OF	2000 PLANT COST	362099.	
1978 WORTH OF	2020 PLANT COST	100380.	
1978 WORTH OF	2020 PLANT SALVAGE	100380.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		399038
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	761138.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		54081.	

1978 WORTH OF	2010 PLANT COST	190650.	
1978 WORTH OF	2020 PLANT SALVAGE	50190.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		137633
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	278094.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		19759.	

# Castroville Pumping Station to Reduced Pipeline (MC)

## FORCE MAIN 36 CASTROVILLE PUMP TO REDUCED PIPE LINE (

DESIGN FACTORS	
NOMINAL PIPE DIAMETER	.600E+02 INCHES
PIPE LENGTH	.680E+05 FEET
MAXIMUM DESIGN FLOW	.400E+02 MGD
HIGH DAY DESIGN FLOW	.400E+02 MGD
AVERAGE DESIGN FLOW	.400E+02 MGD
MINIMUM DESIGN FLOW	.400E+02 MGD
VELOCITY AT MAXIMUM FLOW	.315E+01 FPS
VELOCITY AT AVERAGE FLOW	.315E+01 FPS
VELOCITY AT MINIMUM FLOW	.315E+01 FPS

ENERGY CONSIDERATIONS	
INITIAL ELEVATION	.500E+02 FEET
FINAL ELEVATION	.150E+02 FEET
INITIAL PRESSURE HEAD	0 FEET
FINAL PRESSURE HEAD	.574E+01 FEET
VELOCITY HEAD	.154E+00 FEET
DESIGN TEMPERATURE	.200E+02 DEG C
KINEMATIC VISCOSITY	.108E-04 FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02 FEET
FRICTION FACTOR	.140E-01 FEET
REYNOLDS NUMBER	.145E+07 FEET
FRICTION HEAD LOSS	.293E+02 FEET
MINOR HEAD LOSSES	0 FEET
TOTAL HEAD LOSSES	.293E+02 FEET
THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW	

CONSTRUCTION FACTORS	
DEPTH OF PIPE	.500E+01 FEET
OPEN COUNTRY	.100E+03 PERCENT

ECONOMIC FACTORS	
YEAR CONSTRUCTED	1980 YEARS
DESIGN LIFE	.500E+02 YEARS
INTEREST RATE	.663E+01 PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03 PERCENT
CITY MULTIPLIER	.114E+01
WAGE O&M	.750E+01

COST SUMMARY			
	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
			W/O. % INFLATION
CONSTRUCTION(\$)	.979E+07	.861E+07	.979E+07
OVERHEAD(\$)	.979E+06	.861E+06	.979E+06
LAND COST(\$)	.775E+05	.682E+05	.775E+05
CAPITAL COST(\$)	.108E+08	.954E+07	.108E+08
AMORTIZED(\$/YR)	.676E+06	.594E+06	.676E+06
LABOR(MAN-HR/YR)	.351E+01	.351E+01	.351E+01
LABOR COST(\$/YR)	.263E+02	.231E+02	.263E+02
SUPPLY COST(\$/YR)	.180E+05	.158E+05	.180E+05
POWER(\$/YR)	0	0	0
TOTAL O&M(\$/YR)	.180E+05	.158E+05	.180E+05
AVE ANNUAL(\$/YR)	.694E+06	.610E+06	.789E+06

LAND COST OVERRIDE USED	.775E+05
PERCENT DEPRECIATED	0.

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Castroville Pumping Station to Reduced Pipeline (MC)

1978 WORTH OF 1980 PLANT COST 9467545.  
 1978 WORTH OF 2020 PLANT SALVAGE 145514.  
 1978 WORTH OF LAND USE FROM 1980 TO 2020 IS 62946.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS 220559.  
 1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS 9605336.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 682487.

1978 WORTH OF 1990 PLANT COST 4984791.  
 1978 WORTH OF 2020 PLANT SALVAGE 291029.  
 1978 WORTH OF LAND USE FROM 1990 TO 2020 IS 30661.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS 107537.  
 1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS 4831760.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 343310.

1978 WORTH OF 2000 PLANT COST 2624561.  
 1978 WORTH OF 2020 PLANT SALVAGE 436543.  
 1978 WORTH OF LAND USE FROM 2000 TO 2020 IS 13662.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS 47828.  
 1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS 2249508.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 159834.

1978 WORTH OF 2010 PLANT COST 1381867.  
 1978 WORTH OF 2020 PLANT SALVAGE 582057.  
 1978 WORTH OF LAND USE FROM 2010 TO 2020 IS 4712.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS 16497.  
 1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS 821018.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 58336.



# Reduced Pipeline to Castroville (MC)

## FORCE MAIN 37 REDUCED PIPE LINE TO CASTROVILLE (MC)

### DESIGN FACTORS

NOMINAL PIPE DIAMETER	.360E+02	INCHES
PIPE LENGTH	.175E+05	FEET
MAXIMUM DESIGN FLOW	.400E+02	MGD
HIGH DAY DESIGN FLOW	.400E+02	MGD
AVERAGE DESIGN FLOW	.400E+02	MGD
MINIMUM DESIGN FLOW	.400E+02	MGD
VELOCITY AT MAXIMUM FLOW	.875E+01	FPS
VELOCITY AT AVERAGE FLOW	.875E+01	FPS
VELOCITY AT MINIMUM FLOW	.875E+01	FPS

### ENERGY CONSIDERATIONS

INITIAL ELEVATION	.150E+02	FEET
FINAL ELEVATION	.400E+01	FEET
INITIAL PRESSURE HEAD	0.	FEET
FINAL PRESSURE HEAD	-.982E+02	FEET
VELOCITY HEAD	.119E+01	FEET
DESIGN TEMPERATURE	.200E+02	DEG C
KINEMATIC VISCOSITY	.108E-04	FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02	FEET
FRICTION FACTOR	.157E-01	FEET
REYNOLDS NUMBER	.242E+07	FEET
FRICTION HEAD LOSS	.109E+03	FEET
MINOR HEAD LOSSES	0.	FEET
TOTAL HEAD LOSSES	.109E+03	FEET
ADDITIONAL HEAD REQUIRED	.982E+02	FEET
THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW		

### CONSTRUCTION FACTORS

DEPTH OF PIPE	.500E+01	FEET
OPEN COUNTRY	.100E+03	PERCENT

### ECONOMIC FACTORS

YEAR CONSTRUCTED	1980	YEARS
DESIGN LIFE	.500E+02	YEARS
INTEREST RATE	.063E+01	PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03	PERCENT
CITY MULTIPLIER	.114E+01	
WAGE O&M	.750E+01	

### COST SUMMARY

	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
			%/0. % INFLATION
CONSTRUCTION(\$)	.126E+07	.111E+07	.126E+07
OVERHEAD(\$)	.126E+06	.111E+06	.126E+06
LAND COST(\$)	.200E+05	.176E+05	.200E+05
CAPITAL COST(\$)	.141E+07	.124E+07	.141E+07
AMORTIZED(\$/YR)	.671E+05	.766E+05	.671E+05
LABOR(MAN-HR/YR)	.329E+00	.329E+00	.329E+00
LABOR COST(\$/YR)	.247E+01	.217E+01	.247E+01
SUPPLY COST(\$/YR)	.291E+04	.256E+04	.291E+04
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.291E+04	.256E+04	.291E+04
AVE ANNUAL(\$/YR)	.900E+05	.792E+05	.102E+06

LAND COST OVERRIDE USED	.200E+05
PERCENT DEPRECIATED	0.

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# Reduced Pipeline to Castroville (MC)

1978 WORTH OF	1980 PLANT COST	1220733.		
1978 WORTH OF	2020 PLANT SALVAGE	18762.		
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	16233.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS			35710.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	1253913.		
AVERAGE ANNUAL	COST FROM 1978 TO 2020 IS	89094.		

1978 WORTH OF	1990 PLANT COST	642732.		
1978 WORTH OF	2020 PLANT SALVAGE	37525.		
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	7907.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS			17394.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	630509.		
AVERAGE ANNUAL	COST FROM 1978 TO 2020 IS	44799.		

1978 WORTH OF	2000 PLANT COST	338407.		
1978 WORTH OF	2020 PLANT SALVAGE	56287.		
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	3523.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS			7751.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	293394.		
AVERAGE ANNUAL	COST FROM 1978 TO 2020 IS	20846.		

1978 WORTH OF	2010 PLANT COST	178176.		
1978 WORTH OF	2020 PLANT SALVAGE	75050.		
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	1215.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS			2673.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	107015.		
AVERAGE ANNUAL	COST FROM 1978 TO 2020 IS	7604.		



# Castroville Wellfield (MC)

## WELLFIELD 5

TITLE CASTROVILLE WELLS

### DESIGN FACTORS

NUMBER OF WELLS IN FIELD	.900E+01	
DEPTH OF DRILLING	.500E+03	FEET
DEPTH TO GROUNDWATER	.180E+03	FEET
DRAWDOWN DURING PUMPING	0.	FEET
HEAD REQUIRED FOR PUMPING	.180E+03	FEET
ANNUAL POWER REQUIREMENT	.860E+05	KWHR
CAPACITY OF PUMPING EQUIPMENT	.135E+03	HORSEPOWER
MAXIMUM FLOW	.430E+01	MGD
AVERAGE FLOW	.220E+01	MGD

### ECONOMIC FACTORS

YEAR CONSTRUCTED

1980

DESIGN LIFE

25 YEARS

INTEREST RATE

.663E+01 PERCENT

POWER COST

.500E-01 \$/KWHR

ENR-CC INDEX

.268E+04

AVERAGE WAGE

.750E+01 \$/HR

CITY MULTIPLIER

.114E+01

COST TO DRILL ONE WELL

.360E+05 \$

COST FOR PUMPING EQUIPMENT

.348E+05 \$

### COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 w/o. % INFLATION
CONSTRUCTION(\$)	.778E+06	.684E+06	.778E+06
OVERHEAD(\$)	.778E+05	.684E+05	.778E+05
CAPITAL COST(\$)	.855E+06	.752E+06	.855E+06
AMORTIZED(\$/YR)	.709E+05	.624E+05	.709E+05
LABOR(MAN-HR/YR)	.180E+04	.180E+04	.180E+04
LABOR COST(\$/YR)	.135E+05	.119E+05	.135E+05
SUPPLY COST(\$/YR)	.156E+05	.137E+05	.156E+05
POWER(\$/YR)	.387E+05	.340E+05	.387E+05
TOTAL O&M(\$/YR)	.678E+05	.596E+05	.678E+05
AVE ANNUAL(\$/YR)	.139E+06	.122E+06	.158E+06

PERCENT DEPRECIATED

0.

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# Castroville Wellfield (MC)

1978 WORTH OF	1980 PLANT COST	752756.	
1978 WORTH OF	2005 PLANT COST	151418.	
1978 WORTH OF	2020 PLANT SALVAGE	23139.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS	830995.	
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	1712030.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 121645.

1978 WORTH OF	1990 PLANT COST	396336.	
1978 WORTH OF	2015 PLANT COST	79724.	
1978 WORTH OF	2020 PLANT SALVAGE	46279.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS	404776.	
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	834557.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 59298.

1978 WORTH OF	2000 PLANT COST	208676.	
1978 WORTH OF	2020 PLANT SALVAGE	11570.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS	180365.	
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	377472.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 26820.

1978 WORTH OF	2010 PLANT COST	109871.	
1978 WORTH OF	2020 PLANT SALVAGE	34709.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS	62210.	
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	137372.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 9761.

Diversion from Salinas River to East Side Pumping Station (MD)

OPEN CHANNEL 2  
DIVERSION TO EAST SIDE (MD)

TRAPEZOIDAL CHANNEL  
CONCRETE CHANNEL  
ANGLE SIDE MAKES W/HORIZONTAL .450E+02 DEGREES  
LENGTH OF SIDES .131E+01 FEET  
WIDTH OF CHANNEL AT WATER SURFACE .586E+01 FEET  
WIDTH OF CHANNEL BOTTOM .400E+01 FEET  
CHANNEL CONVEYANCE .127E+00  
MAXIMUM FLOW .430E+02 MGD  
FLOW DURING HIGH PERIOD .430E+02 MGD  
AVERAGE FLOW .430E+02 MGD  
MINIMUM FLOW .430E+02 MGD  
SLOPE .100E-01 FT/FT  
LENGTH .500E+02 FEET  
NORMAL DEPTH AT PEAK FLOW .928E+00 FEET  
VELOCITY AT PEAK FLOW .940E+01 FPS  
VELOCITY AT AVERAGE FLOW .940E+01 FPS  
INITIAL ELEVATION .361E+03 FEET  
FINAL ELEVATION .361E+03 FEET  
TOTAL HEAD INITIAL .363E+03 FEET  
TOTAL HEAD FINAL .363E+03 FEET  
WETTED PERIMETER .663E+01 FEET  
FREEBOARD 0. FEET  
TOTAL CHANNEL PERIMETER .663E+01 FEET  
EARTH MOVED .193E+02 CU YD  
SPECIFIC ENERGY .230E+01 FEET  
FROUDE NUMBER AT PEAK FLOW .172E+01  
MANNINGS N .120E-01  
DESIGNS ASSUME STEADY, UNIFORM FLOW

CONSTRUCTION FACTORS  
EXCAVATION IN ROCK 0. PERCENT  
WIDTH OF RIGHT OF WAY 0. FEET  
LAND REQUIRED 0. ACRES

ECONOMIC FACTORS  
EPA SEWER CONSTRUCTION INDEX .305E+03  
O&M WAGEUM RATE .750E+01 DOLLARS/HOUR  
INTEREST RATE .663E+01 PERCENT  
CITY MULTIPLIER .114E+01  
DESIGN LIFE 50 YEARS  
YEAR BUILT 1980 YEAR

COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 w/o. % INFLATION
CONSTRUCTION(\$)	.322E+03	.284E+03	.322E+03
OVERHEAD(\$)	.322E+02	.284E+02	.322E+02
LAND COST(\$)	.690E+02	.607E+02	.690E+02
CAPITAL COST(\$)	.424E+03	.373E+03	.424E+03
AMORTIZED(\$/YR)	.293E+02	.257E+02	.293E+02
LABOR(MAN-HR/YR)	.236E+00	.236E+00	.236E+00
LABOR COST(\$/YR)	.177E+01	.156E+01	.177E+01
SUPPLY COST(\$/YR)	.112E+02	.983E+01	.112E+02
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.129E+02	.114E+02	.129E+02
AVE ANNUAL(\$/YR)	.422E+02	.371E+02	.480E+02

LAND COST OVERRIDE USED .690E+02  
PERCENT DEPRECIATED 0.

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Diversion from Salinas River to East Side Pumping Station (MD)

1978 WORTH OF	1980 PLANT COST	312.		
1978 WORTH OF	2020 PLANT SALVAGE	5.		
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS		56.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS			158.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS		521.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		37.		

1978 WORTH OF	1990 PLANT COST	164.		
1978 WORTH OF	2020 PLANT SALVAGE	10.		
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS		27.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS			77.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS		259.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		18.		

1978 WORTH OF	2000 PLANT COST	86.		
1978 WORTH OF	2020 PLANT SALVAGE	14.		
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS		12.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS			34.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS		118.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		8.		

1978 WORTH OF	2010 PLANT COST	45.		
1978 WORTH OF	2020 PLANT SALVAGE	19.		
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS		4.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS			12.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS		42.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		3.		



# East Side Canal, Part 1 (MD)

OPEN CHANNEL 3  
EAST SIDE CANAL (MD) CONC-1

TRAPEZOIDAL CHANNEL		
CONCRETE CHANNEL		
ANGLE SIDE MAKES W/HORIZONTAL	.450E+02	DEGREES
LENGTH OF SIDES	.573E+01	FEET
WIDTH OF CHANNEL AT WATER SURFACE	.181E+02	FEET
WIDTH OF CHANNEL BOTTOM	.100E+02	FEET
CHANNEL CONVEYANCE	.338E+00	
MAXIMUM FLOW	.260E+03	MGD
FLOW DURING HIGH PERIOD	.260E+03	MGD
AVERAGE FLOW	.260E+03	MGD
MINIMUM FLOW	.260E+03	MGD
SLOPE	.389E-03	FT/FT
LENGTH	.515E+05	FEET
NORMAL DEPTH AT PEAK FLOW	.405E+01	FEET
VELOCITY AT PEAK FLOW	.457E+01	FPS
VELOCITY AT AVERAGE FLOW	.457E+01	FPS
INITIAL ELEVATION	.360E+03	FEET
FINAL ELEVATION	.340E+03	FEET
TOTAL HEAD INITIAL	.364E+03	FEET
TOTAL HEAD FINAL	.344E+03	FEET
WETTED PERIMETER	.215E+02	FEET
FREEBOARD	0.	FEET
TOTAL CHANNEL PERIMETER	.215E+02	FEET
EARTH MOVED	.143E+06	CU YD
SPECIFIC ENERGY	.437E+01	FEET
FROUDE NUMBER AT PEAK FLOW	.400E+00	
MANNINGS N	.120E-01	
DESIGNS ASSUME STEADY, UNIFORM FLOW		

CONSTRUCTION FACTORS		
EXCAVATION IN ROCK	0.	PERCENT
WIDTH OF RIGHT OF WAY	0.	FEET
LAND REQUIRED	0.	ACRES

ECONOMIC FACTORS		
EPA SEWER CONSTRUCTION INDEX	.305E+03	
O&M WAGEOM RATE	.750E+01	DOLLARS/HOUR
INTEREST RATE	.663E+01	PERCENT
CITY MULTIPLIER	.114E+01	
DESIGN LIFE	50	YEARS
YEAR BUILT	1980	YEAR

## COST SUMMARY

	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
CONSTRUCTION(\$)	.178E+07	.157E+07	.178E+07
OVERHEAD(\$)	.178E+06	.157E+06	.178E+06
LAND COST(\$)	.711E+05	.625E+05	.711E+05
CAPITAL COST(\$)	.203E+07	.179E+07	.203E+07
AMORTIZED(\$/YR)	.140E+06	.123E+06	.140E+06
LABOR(MAN-HR/YR)	.476E+03	.476E+03	.476E+03
LABOR COST(\$/YR)	.357E+04	.314E+04	.357E+04
SUPPLY COST(\$/YR)	.231E+05	.203E+05	.231E+05
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.267E+05	.235E+05	.267E+05
AVE ANNUAL(\$/YR)	.167E+06	.147E+06	.190E+06

LAND COST OVERRIDE USED	.711E+05
PERCENT DEPRECIATED	0.

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# East Side Canal, Part 1 (MD)

1978 WORTH OF	1980 PLANT COST	1722244.		
1978 WORTH OF	2020 PLANT SALVAGE	26471.		
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS		57733.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS			327250.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS		2080756.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		147844.		

1978 WORTH OF	1990 PLANT COST	906785.		
1978 WORTH OF	2020 PLANT SALVAGE	52941.		
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS		28122.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS			159403.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS		1041368.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		73992.		

1978 WORTH OF	2000 PLANT COST	477435.		
1978 WORTH OF	2020 PLANT SALVAGE	79412.		
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS		12531.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS			71029.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS		481583.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		34218.		

1978 WORTH OF	2010 PLANT COST	251376.		
1978 WORTH OF	2020 PLANT SALVAGE	105882.		
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS		4322.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS			24499.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS		174314.	
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		12386.		



# East Side Canal, Part 2 (MD)

OPEN CHANNEL 4  
EAST SIDE CANAL(MD) CONC=2

TRAPEZOIDAL CHANNEL  
CONCRETE CHANNEL  
ANGLE SIDE MAKES W/HORIZONTAL .450E+02 DEGREES  
LENGTH OF SIDES .538E+01 FEET  
WIDTH OF CHANNEL AT WATER SURFACE .148E+02 FEET  
WIDTH OF CHANNEL BOTTOM .100E+02 FEET  
CHANNEL CONVEYANCE .133E+00  
MAXIMUM FLOW .162E+03 MGD  
FLOW DURING HIGH PERIOD .162E+03 MGD  
AVERAGE FLOW .162E+03 MGD  
MINIMUM FLOW .162E+03 MGD  
SLOPE .971E-03 FT/FT  
LENGTH .515E+05 FEET  
NORMAL DEPTH AT PEAK FLOW .239E+01 FEET  
VELOCITY AT PEAK FLOW .547E+01 FPS  
VELOCITY AT AVERAGE FLOW .547E+01 FPS  
INITIAL ELEVATION .250E+03 FEET  
FINAL ELEVATION .200E+03 FEET  
TOTAL HEAD INITIAL .253E+03 FEET  
TOTAL HEAD FINAL .203E+03 FEET  
WETTED PERIMETER .168E+02 FEET  
FREEBOARD 0 FEET  
TOTAL CHANNEL PERIMETER .168E+02 FEET  
EARTH MOVED .847E+05 CU YD  
SPECIFIC ENERGY .286E+01 FEET  
FROUDE NUMBER AT PEAK FLOW .623E+00  
MANNINGS N .120E-01  
DESIGNS ASSUME STEADY, UNIFORM FLOW

CONSTRUCTION FACTORS  
EXCAVATION IN ROCK 0 PERCENT  
WIDTH OF RIGHT OF WAY 0 FEET  
LAND REQUIRED 0 ACRES

ECONOMIC FACTORS  
EPA SEWER CONSTRUCTION INDEX .305E+03  
O&M WAGEOM RATE .750E+01 DOLLARS/HOUR  
INTEREST RATE .663E+01 PERCENT  
CITY MULTIPLIER .114E+01  
DESIGN LIFE 50 YEARS  
YEAR BUILT 1980 YEAR

## COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 w/o % INFLATION
CONSTRUCTION(\$)	.105E+07	.921E+06	.105E+07
OVERHEAD(\$)	.105E+06	.921E+05	.105E+06
LAND COST(\$)	.711E+05	.625E+05	.711E+05
CAPITAL COST(\$)	.122E+07	.108E+07	.122E+07
AMORTIZED(\$/YR)	.845E+05	.743E+05	.845E+05
LABOR(MAN-HR/YR)	.413E+03	.413E+03	.413E+03
LABOR COST(\$/YR)	.310E+04	.273E+04	.310E+04
SUPPLY COST(\$/YR)	.195E+05	.171E+05	.195E+05
POWER(\$/YR)	0	0	0
TOTAL O&M(\$/YR)	.226E+05	.198E+05	.226E+05
AVE ANNUAL(\$/YR)	.107E+06	.941E+05	.122E+06

LAND COST OVERRIDE USED .711E+05  
PERCENT DEPRECIATED 0

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# East Side Canal, Part 2 (MD)

1978 WORTH OF	1980 PLANT COST	134490.		
1978 WORTH OF	2020 PLANT SALVAGE	2067.		
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	47339.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS	453084.	273321.	
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		32193.		

1978 WORTH OF	1990 PLANT COST	70811.		
1978 WORTH OF	2020 PLANT SALVAGE	4134.		
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	23059.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS	222870.	133134.	
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		15836.		

1978 WORTH OF	2000 PLANT COST	37283.		
1978 WORTH OF	2020 PLANT SALVAGE	6201.		
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	10275.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS	100680.	59324.	
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		7154.		

1978 WORTH OF	2010 PLANT COST	19630.		
1978 WORTH OF	2020 PLANT SALVAGE	8268.		
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	3544.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS	35367.	20461.	
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		2513.		

# East Side Canal, Part 3 (MD)

OPEN CHANNEL 5  
EAST SIDE CANAL (MD) EARTH-1

TRAPEZOIDAL CHANNEL  
EARTH LINED CHANNEL  
ANGLE SIDE MAKES W/HORIZONTAL .450E+02 DEGREES  
LENGTH OF SIDES .501E+01 FEET  
WIDTH OF CHANNEL AT WATER SURFACE .191E+02 FEET  
WIDTH OF CHANNEL BOTTOM .120E+02 FEET  
CHANNEL CONVEYANCE .195E+00  
MAXIMUM FLOW .129E+03 MGD  
FLOW DURING HIGH PERIOD .129E+03 MGD  
AVERAGE FLOW .129E+03 MGD  
MINIMUM FLOW .129E+03 MGD  
SLOPE .473E-03 FT/FT  
LENGTH .422E+05 FEET  
NORMAL DEPTH AT PEAK FLOW .354E+01 FEET  
VELOCITY AT PEAK FLOW .234E+01 FPS  
VELOCITY AT AVERAGE FLOW .234E+01 FPS  
INITIAL ELEVATION .200E+03 FEET  
FINAL ELEVATION .180E+03 FEET  
TOTAL HEAD INITIAL .204E+03 FEET  
TOTAL HEAD FINAL .184E+03 FEET  
WETTED PERIMETER .220E+02 FEET  
FREEBOARD 0. FEET  
TOTAL CHANNEL PERIMETER .220E+02 FEET  
EARTH MOVED .116E+06 CU YD  
SPECIFIC ENERGY .363E+01 FEET  
FROUDE NUMBER AT PEAK FLOW .219E+00  
MANNINGS N .250E-01  
DESIGNS ASSUME STEADY, UNIFORM FLOW

CONSTRUCTION FACTORS  
EXCAVATION IN ROCK 0. PERCENT  
WIDTH OF RIGHT OF WAY 0. FEET  
LAND REQUIRED 0. ACRES

ECONOMIC FACTORS  
EPA SEWER CONSTRUCTION INDEX .305E+03  
O&M WAGEOM RATE .750E+01 DOLLARS/HOUR  
INTEREST RATE .663E+01 PERCENT  
CITY MULTIPLIER .114E+01  
DESIGN LIFE 50 YEARS  
YEAR BUILT 1980 YEAR

COST SUMMARY  
COST IN 1978 COST IN 1978 COST IN 1980  
DOLLARS DOLLARS DOLLARS  
BUILT IN 1978 BUILT IN 1980 BUILT IN 1980  
W/O. % INFLATION  
CONSTRUCTION(\$).139E+06.122E+06.139E+06  
OVERHEAD(\$).139E+05.122E+05.139E+05  
LAND COST(\$).583E+05.512E+05.583E+05  
CAPITAL COST(\$).211E+06.186E+06.211E+06  
AMORTIZED(\$/YR).146E+05.128E+05.146E+05  
LABOR(MAN-HR/YR).396E+03.396E+03.396E+03  
LABOR COST(\$/YR).297E+04.261E+04.297E+04  
SUPPLY COST(\$/YR).193E+05.170E+05.193E+05  
POWER(\$/YR)0.0.0.  
TOTAL O&M(\$/YR).223E+05.196E+05.223E+05  
AVE ANNUAL(\$/YR).369E+05.324E+05.419E+05

LAND COST OVERRIDE USED .583E+05  
PERCENT DEPRECIATED 0.

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# East Side Canal, Part 3 (MD)

1978 WORTH OF	1980 PLANT COST	134490.		
1978 WORTH OF	2020 PLANT SALVAGE	2067.		
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	47339.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS	419991.	240229.	
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		29842.		

1978 WORTH OF	1990 PLANT COST	70811.		
1978 WORTH OF	2020 PLANT SALVAGE	4134.		
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	23059.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS	206750.	117015.	
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		14690.		

1978 WORTH OF	2000 PLANT COST	37283.		
1978 WORTH OF	2020 PLANT SALVAGE	6201.		
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	10275.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS	93497.	52141.	
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		6643.		

1978 WORTH OF	2010 PLANT COST	19630.		
1978 WORTH OF	2020 PLANT SALVAGE	8268.		
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	3544.		
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS	32890.	17984.	
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS			
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		2337.		



# East Side Canal, Part 4 (MD)

OPEN CHANNEL 6  
EAST SIDE CANAL (MD) EARTH=2

## TRAPEZOIDAL CHANNEL

EARTH LINED CHANNEL  
ANGLE SIDE MAKES W/HORIZONTAL .450E+02 DEGREES  
LENGTH OF SIDES .500E+01 FEET  
WIDTH OF CHANNEL AT WATER SURFACE .101E+02 FEET  
WIDTH OF CHANNEL BOTTOM .300E+01 FEET  
CHANNEL CONVEYANCE .277E+01  
MAXIMUM FLOW .320E+02 MGD  
FLOW DURING HIGH PERIOD .320E+02 MGD  
AVERAGE FLOW .320E+02 MGD  
MINIMUM FLOW .320E+02 MGD  
SLOPE .237E-03 FT/FT  
LENGTH .422E+05 FEET  
NORMAL DEPTH AT PEAK FLOW .354E+01 FEET  
VELOCITY AT PEAK FLOW .138E+01 FPS  
VELOCITY AT AVERAGE FLOW .138E+01 FPS  
INITIAL ELEVATION .180E+03 FEET  
FINAL ELEVATION .170E+03 FEET  
TOTAL HEAD INITIAL .184E+03 FEET  
TOTAL HEAD FINAL .174E+03 FEET  
WETTED PERIMETER .130E+02 FEET  
FREEBOARD 0 FEET  
TOTAL CHANNEL PERIMETER .130E+02 FEET  
EARTH MOVED .519E+05 CU YD  
SPECIFIC ENERGY .357E+01 FEET  
FROUDE NUMBER AT PEAK FLOW .130E+00  
MANNINGS N .250E-01  
DESIGNS ASSUME STEADY, UNIFORM FLOW

## CONSTRUCTION FACTORS

EXCAVATION IN ROCK 0 PERCENT  
WIDTH OF RIGHT OF WAY 0 FEET  
LAND REQUIRED 0 ACRES

## ECONOMIC FACTORS

EPA SEWER CONSTRUCTION INDEX .305E+03  
O&M WAGEOM RATE .750E+01 DOLLARS/HOUR  
INTEREST RATE .663E+01 PERCENT  
CITY MULTIPLIER .114E+01  
DESIGN LIFE 50 YEARS  
YEAR BUILT 1980 YEAR

## COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O % INFLATION
CONSTRUCTION(\$)	.621E+05	.546E+05	.621E+05
OVERHEAD(\$)	.621E+04	.546E+04	.621E+04
LAND COST(\$)	.583E+05	.512E+05	.583E+05
CAPITAL COST(\$)	.127E+06	.111E+06	.127E+06
AMORTIZED(\$/YR)	.874E+04	.769E+04	.874E+04
LABOR(MAN-HR/YR)	.293E+03	.293E+03	.293E+03
LABOR COST(\$/YR)	.220E+04	.193E+04	.220E+04
SUPPLY COST(\$/YR)	.135E+05	.119E+05	.135E+05
POWER(\$/YR)	0	0	0
TOTAL O&M(\$/YR)	.157E+05	.138E+05	.157E+05
AVE ANNUAL(\$/YR)	.245E+05	.215E+05	.278E+05

LAND COST OVERRIDE USED .583E+05

PERCENT DEPRECIATED 0

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East Side Canal, Part 4 (MD)

1978 WORTH OF	1980 PLANT COST	60085.		
1978 WORTH OF	2020 PLANT SALVAGE	623.		
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS		47339.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS			192428.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS		298929.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 21240.

1978 WORTH OF	1990 PLANT COST	31636.		
1978 WORTH OF	2020 PLANT SALVAGE	1847.		
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS		23059.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS			93731.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS		146579.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 10415.

1978 WORTH OF	2000 PLANT COST	16657.		
1978 WORTH OF	2020 PLANT SALVAGE	2770.		
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS		10275.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS			41766.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS		65927.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 4684.

1978 WORTH OF	2010 PLANT COST	8770.		
1978 WORTH OF	2020 PLANT SALVAGE	3694.		
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS		3544.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS			14406.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS		23025.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 1636.



# East Side Wellfield (MD)

## WELLFIELD 4

TITLE EAST SIDE WELLS (MD)

### DESIGN FACTORS

NUMBER OF WELLS IN FIELD  
DEPTH OF DRILLING  
DEPTH TO GROUNDWATER  
DRAWDOWN DURING PUMPING  
HEAD REQUIRED FOR PUMPING  
ANNUAL POWER REQUIREMENT  
CAPACITY OF PUMPING EQUIPMENT  
MAXIMUM FLOW  
AVERAGE FLOW

.450E+02  
.500E+03 FEET  
.180E+03 FEET  
.500E+01 FEET  
.185E+03 FEET  
.108E+07 KWHR  
.126E+04 HORSEPOWER  
.390E+02 MGD  
.270E+02 MGD

### ECONOMIC FACTORS

YEAR CONSTRUCTED  
DESIGN LIFE  
INTEREST RATE  
POWER COST  
ENR-CC INDEX  
AVERAGE WAGE  
CITY MULTIPLIER  
COST TO DRILL ONE WELL  
COST FOR PUMPING EQUIPMENT

1980  
20 YEARS  
.663E+01 PERCENT  
.500E+01 \$/KWHR  
.268E+04  
.750E+01 \$/HR  
.114E+01  
.360E+05 \$  
.960E+05 \$

### COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O. % INFLATION
CONSTRUCTION(\$)	.726E+07	.638E+07	.726E+07
OVERHEAD(\$)	.726E+06	.638E+06	.726E+06
CAPITAL COST(\$)	.798E+07	.702E+07	.798E+07
AMORTIZED(\$/YR)	.732E+06	.644E+06	.732E+06
LABOR(MAN-HR/YR)	.900E+04	.900E+04	.900E+04
LABOR COST(\$/YR)	.675E+05	.594E+05	.675E+05
SUPPLY COST(\$/YR)	.145E+06	.128E+06	.145E+06
POWER(\$/YR)	.244E+07	.215E+07	.244E+07
TOTAL O&M(\$/YR)	.265E+07	.233E+07	.265E+07
AVE ANNUAL(\$/YR)	.339E+07	.298E+07	.385E+07

PERCENT DEPRECIATED

0.

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East Side Wellfield (MD)

1978 WORTH OF 1980 PLANT COST 7024432.  
 1978 WORTH OF 2000 PLANT COST 1947289.  
 1978 WORTH OF 2020 PLANT COST 539821.  
 1978 WORTH OF 2020 PLANT SALVAGE 539821.  
 1978 WORTH OF LAND USE FROM 1980 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS 52479897.  
 1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS 41451618.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 2945257.

1978 WORTH OF 1990 PLANT COST 3698459.  
 1978 WORTH OF 2010 PLANT COST 1025274.  
 1978 WORTH OF 2020 PLANT SALVAGE 269910.  
 1978 WORTH OF LAND USE FROM 1990 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS 15820878.  
 1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS 20274701.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 1440576.

1978 WORTH OF 2000 PLANT COST 1947289.  
 1978 WORTH OF 2020 PLANT COST 539821.  
 1978 WORTH OF 2020 PLANT SALVAGE 539821.  
 1978 WORTH OF LAND USE FROM 2000 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS 7049678.  
 1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS 8996968.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 639260.

1978 WORTH OF 2010 PLANT COST 1025274.  
 1978 WORTH OF 2020 PLANT SALVAGE 269910.  
 1978 WORTH OF LAND USE FROM 2010 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS 2431522.  
 1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS 3186886.  
 AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 226437.

# From East Side Pumping Station to Canal (MD)

## FORCE MAIN 34 EAST SIDE FROM PUMP TO CANAL (MD)

DESIGN FACTORS	
NOMINAL PIPE DIAMETER	.840E+02 INCHES
PIPE LENGTH	.100E+04 FEET
MAXIMUM DESIGN FLOW	.260E+03 MGD
HIGH DAY DESIGN FLOW	.260E+03 MGD
AVERAGE DESIGN FLOW	.260E+03 MGD
MINIMUM DESIGN FLOW	.260E+03 MGD
VELOCITY AT MAXIMUM FLOW	.105E+02 FPS
VELOCITY AT AVERAGE FLOW	.105E+02 FPS
VELOCITY AT MINIMUM FLOW	.105E+02 FPS

ENERGY CONSIDERATIONS	
INITIAL ELEVATION	.180E+03 FEET
FINAL ELEVATION	.360E+03 FEET
INITIAL PRESSURE HEAD	0. FEET
FINAL PRESSURE HEAD	-.183E+03 FEET
VELOCITY HEAD	.170E+01 FEET
DESIGN TEMPERATURE	.200E+02 DEG C
KINEMATIC VISCOSITY	.108E-04 FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02 FEET
FRICTION FACTOR	.129E-01 FEET
REYNOLDS NUMBER	.675E+07 FEET
FRICTION HEAD LOSS	.313E+01 FEET
MINOR HEAD LOSSES	0. FEET
TOTAL HEAD LOSSES	.313E+01 FEET
ADDITIONAL HEAD REQUIRED	.183E+03 FEET
THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW	

CONSTRUCTION FACTORS	
DEPTH OF PIPE	.500E+01 FEET
OPEN COUNTRY	.100E+03 PERCENT

ECONOMIC FACTORS	
YEAR CONSTRUCTED	1980 YEARS
DESIGN LIFE	.500E+02 YEARS
INTEREST RATE	.663E+01 PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03 PERCENT
CITY MULTIPLIER	.114E+01
WAGE O&M	.750E+01

COST SUMMARY			
	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
CONSTRUCTION(\$)	.239E+06	.210E+06	.239E+06
OVERHEAD(\$)	.239E+05	.210E+05	.239E+05
LAND COST(\$)	.114E+04	.100E+04	.114E+04
CAPITAL COST(\$)	.263E+06	.232E+06	.263E+06
AMORTIZED(\$/YR)	.165E+05	.145E+05	.165E+05
LABOR(MAN-HR/YR)	.106E+00	.106E+00	.106E+00
LABOR COST(\$/YR)	.791E+00	.696E+00	.791E+00
SUPPLY COST(\$/YR)	.362E+03	.318E+03	.362E+03
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.363E+03	.319E+03	.363E+03
AVE ANNUAL(\$/YR)	.168E+05	.148E+05	.191E+05

LAND COST OVERRIDE USED	.114E+04
PERCENT DEPRECIATED	0.



From East Side Pumping Station to Canal (MD)

1978 WORTH OF	1980 PLANT COST	230766.		
1978 WORTH OF	2020 PLANT SALVAGE	3547.		
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS		926.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS			4447.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	232592.		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		16526.		

1978 WORTH OF	1990 PLANT COST	121502.		
1978 WORTH OF	2020 PLANT SALVAGE	7094.		
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS		451.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS			2166.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	117025.		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		8315.		

1978 WORTH OF	2000 PLANT COST	63972.		
1978 WORTH OF	2020 PLANT SALVAGE	10641.		
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS		201.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS			965.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	54498.		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		3872.		

1978 WORTH OF	2010 PLANT COST	33682.		
1978 WORTH OF	2020 PLANT SALVAGE	14187.		
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS		69.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS			333.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	19897.		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		1414.		



# East Side Pumping Station (MD)

## PUMPING STATION 10

### EAST SIDE PUMP STATION (MD)

PUMP HEAD	.183E+03	FEET
PUMP POWER	.139E+05	HORSEPOWER
ELECTRICAL USAGE	.350E+08	KWHR/YEAR
MAXIMUM DESIGN FLOW	.260E+03	MGD
HIGH DAY DESIGN FLOW	.150E+03	MGD
AVERAGE DESIGN FLOW	.100E+03	MGD
MINIMUM DESIGN FLOW	.500E+02	MGD
OVERALL EFFICIENCY	.600E+02	PERCENT
INITIAL ELEVATION	.180E+03	FEET
FINAL ELEVATION	.360E+03	FEET
INITIAL PRESSURE HEAD	0	FEET
FINAL PRESSURE HEAD	.300E+01	FEET
INITIAL TOTAL HEAD	.180E+03	FEET
FINAL TOTAL HEAD	.363E+03	FEET
ECONOMIC FACTORS		
CITY MULTIPLIER	.114E+01	
DESIGN LIFE	20	YEARS
INTEREST RATE	.663E+01	PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03	
AVERAGE D&M WAGE/DM	.750E+01	DOLLARS/HOUR
COST OF ELECTRICITY	.500E-01	DOLLARS/KWHR

### COST SUMMARY

	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
CONSTRUCTION(\$)	.353E+07	.311E+07	.353E+07
OVERHEAD(\$)	.353E+06	.311E+06	.353E+06
CAPITAL COST(\$)	.389E+07	.342E+07	.389E+07
AMORTIZED(\$/YR)	.356E+06	.313E+06	.356E+06
LABOR(MAN-HR/YR)	.548E+04	.548E+04	.548E+04
LABOR COST(\$/YR)	.411E+05	.361E+05	.411E+05
SUPPLY COST(\$/YR)	.175E+05	.154E+05	.175E+05
POWER(\$/YR)	.175E+07	.154E+07	.175E+07
TOTAL O&M(\$/YR)	.181E+07	.159E+07	.181E+07
AVE ANNUAL(\$/YR)	.216E+07	.190E+07	.246E+07

PERCENT DEPRECIATED

0.

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# East Side Pumping Station (MD)

1978 WORTH OF 1980 PLANT COST 3415461.  
 1978 WORTH OF 2000 PLANT COST 946822.  
 1978 WORTH OF 2020 PLANT COST 262475.  
 1978 WORTH OF 2020 PLANT SALVAGE 262475.  
 1978 WORTH OF LAND USE FROM 1980 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1980 TO 2020 IS 22184382.  
 1978 WORTH OF ALL COSTS FROM 1980 TO 2020 IS 26546665.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 1886217.

1978 WORTH OF 1990 PLANT COST 1798287.  
 1978 WORTH OF 2010 PLANT COST 498515.  
 1978 WORTH OF 2020 PLANT SALVAGE 131237.  
 1978 WORTH OF LAND USE FROM 1990 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 1990 TO 2020 IS 10805958.  
 1978 WORTH OF ALL COSTS FROM 1990 TO 2020 IS 12971522.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 921664.

1978 WORTH OF 2000 PLANT COST 946822.  
 1978 WORTH OF 2020 PLANT COST 262475.  
 1978 WORTH OF 2020 PLANT SALVAGE 262475.  
 1978 WORTH OF LAND USE FROM 2000 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2000 TO 2020 IS 4815063.  
 1978 WORTH OF ALL COSTS FROM 2000 TO 2020 IS 5761886.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 409399.

1978 WORTH OF 2010 PLANT COST 498515.  
 1978 WORTH OF 2020 PLANT SALVAGE 131237.  
 1978 WORTH OF LAND USE FROM 2010 TO 2020 IS 0.  
 1978 WORTH OF ANNUAL OPERATING COST FROM 2010 TO 2020 IS 1660776.  
 1978 WORTH OF ALL COSTS FROM 2010 TO 2020 IS 2028053.

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 144099.



# East Side Siphons (MD)

## FORCE MAIN 35 EAST SIDE SIPHONS (MD)

### DESIGN FACTORS

NOMINAL PIPE DIAMETER	.600E+02	INCHES
PIPE LENGTH	.355E+04	FEET
MAXIMUM DESIGN FLOW	.100E+03	MGD
HIGH DAY DESIGN FLOW	.100E+03	MGD
AVERAGE DESIGN FLOW	.100E+03	MGD
MINIMUM DESIGN FLOW	.100E+03	MGD
VELOCITY AT MAXIMUM FLOW	.788E+01	FPS
VELOCITY AT AVERAGE FLOW	.788E+01	FPS
VELOCITY AT MINIMUM FLOW	.788E+01	FPS

### ENERGY CONSIDERATIONS

INITIAL ELEVATION	.120E+03	FEET
FINAL ELEVATION	.110E+03	FEET
INITIAL PRESSURE HEAD	0.	FEET
FINAL PRESSURE HEAD	.456E+00	FEET
VELOCITY HEAD	.964E+00	FEET
DESIGN TEMPERATURE	.200E+02	DEG C
KINEMATIC VISCOSITY	.108E-04	FEET**2/SEC
ROUGHNESS HEIGHT	.100E-02	FEET
FRICTION FACTOR	.139E-01	FEET
REYNOLDS NUMBER	.364E+07	FEET
FRICTION HEAD LOSS	.954E+01	FEET
MINOR HEAD LOSSES	0.	FEET
TOTAL HEAD LOSSES	.954E+01	FEET

THE HEAD LOSSES ABOVE WERE CALCULATED AT MAX FLOW

### CONSTRUCTION FACTORS

DEPTH OF PIPE	.500E+01	FEET
OPEN COUNTRY	.100E+03	PERCENT

### ECONOMIC FACTORS

YEAR CONSTRUCTED	1980	YEARS
DESIGN LIFE	.500E+02	YEARS
INTEREST RATE	.063E+01	PERCENT
EPA SEWER CONSTRUCTION INDEX	.305E+03	PERCENT
CITY MULTIPLIER	.114E+01	
WAGE O&M	.750E+01	

### COST SUMMARY

	COST IN 1978 DOLLARS	COST IN 1978 DOLLARS	COST IN 1980 DOLLARS
	BUILT IN 1978	BUILT IN 1980	BUILT IN 1980
CONSTRUCTION(\$)	.511E+06	.449E+06	.511E+06
OVERHEAD(\$)	.511E+05	.449E+05	.511E+05
LAND COST(\$)	.405E+04	.356E+04	.405E+04
CAPITAL COST(\$)	.566E+06	.498E+06	.566E+06
AMORTIZED(\$/YR)	.353E+05	.310E+05	.353E+05
LABOR(MAN-HR/YR)	.187E+00	.187E+00	.187E+00
LABOR COST(\$/YR)	.140E+01	.123E+01	.140E+01
SUPPLY COST(\$/YR)	.937E+03	.824E+03	.937E+03
POWER(\$/YR)	0.	0.	0.
TOTAL O&M(\$/YR)	.939E+03	.826E+03	.939E+03
AVE ANNUAL(\$/YR)	.362E+05	.318E+05	.412E+05

W/O. % INFLATION

LAND COST OVERRIDE USED	.405E+04
PERCENT DEPRECIATED	0.

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# East Side Siphons (MD)

1978 WORTH OF	1980 PLANT COST	494262.		
1978 WORTH OF	2000 PLANT COST	137018.		
1978 WORTH OF	2020 PLANT COST	37984.		
1978 WORTH OF	2020 PLANT SALVAGE	37984.		
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS		3286.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS			11504.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	646070.		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		45905.		

1978 WORTH OF	1990 PLANT COST	260235.		
1978 WORTH OF	2010 PLANT COST	72142.		
1978 WORTH OF	2020 PLANT SALVAGE	18992.		
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS		1601.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS			5604.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	320590.		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		22779.		

1978 WORTH OF	2000 PLANT COST	137018.		
1978 WORTH OF	2020 PLANT COST	37984.		
1978 WORTH OF	2020 PLANT SALVAGE	37984.		
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS		713.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS			2497.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	140228.		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		9964.		

1978 WORTH OF	2010 PLANT COST	72142.		
1978 WORTH OF	2020 PLANT SALVAGE	18992.		
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS		246.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS			861.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	54257.		
AVERAGE ANNUAL COST FROM 1978 TO 2020 IS		3855.		

# Carmel Wellfield (MF) 180

## WELLFIELD 6

TITLE CARMEL WELLS (MF) 180

### DESIGN FACTORS

NUMBER OF WELLS IN FIELD	.200E+02	
DEPTH OF DRILLING	.180E+03	FEET
DEPTH TO GROUNDWATER	.180E+03	FEET
DRAWDOWN DURING PUMPING	0.	FEET
HEAD REQUIRED FOR PUMPING	.180E+03	FEET
ANNUAL POWER REQUIREMENT	.453E+06	KWHR
CAPACITY OF PUMPING EQUIPMENT	.629E+03	HORSEPOWER
MAXIMUM FLOW	.200E+02	MGD
AVERAGE FLOW	.116E+02	MGD

### ECONOMIC FACTORS

YEAR CONSTRUCTED	1980	
DESIGN LIFE	25	YEARS
INTEREST RATE	.663E+01	PERCENT
POWER COST	.500E-01	\$/KWHR
ENR-CC INDEX	.268E+04	
AVERAGE WAGE	.750E+01	\$/HR
CITY MULTIPLIER	.114E+01	
COST TO DRILL ONE WELL	.246E+05	\$
COST FOR PUMPING EQUIPMENT	.697E+05	\$

### COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 w/o % INFLATION
CONSTRUCTION(\$)	.230E+07	.203E+07	.230E+07
OVERHEAD(\$)	.230E+06	.203E+06	.230E+06
CAPITAL COST(\$)	.254E+07	.223E+07	.254E+07
AMORTIZED(\$/YR)	.210E+06	.185E+06	.210E+06
LABOR(MAN-HR/YR)	.400E+04	.400E+04	.400E+04
LABOR COST(\$/YR)	.300E+05	.264E+05	.300E+05
SUPPLY COST(\$/YR)	.461E+05	.405E+05	.461E+05
POWER(\$/YR)	.453E+06	.399E+06	.453E+06
TOTAL O&M(\$/YR)	.530E+06	.466E+06	.530E+06
AVE ANNUAL(\$/YR)	.740E+06	.651E+06	.841E+06

PERCENT DEPRECIATED

0.

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Carmel Wellfield (MF) 180

1978 WORTH OF	1980 PLANT COST	2225371.	
1978 WORTH OF	2005 PLANT COST	447637.	
1978 WORTH OF	2020 PLANT SALVAGE	68407.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS	6495979.	
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	9100581.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 646622.

1978 WORTH OF	1990 PLANT COST	1171688.	
1978 WORTH OF	2015 PLANT COST	235687.	
1978 WORTH OF	2020 PLANT SALVAGE	136814.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS	3164176.	
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	4434737.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 515101.

1978 WORTH OF	2000 PLANT COST	616910.	
1978 WORTH OF	2020 PLANT SALVAGE	34204.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS	1409936.	
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	1992642.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 141583.

1978 WORTH OF	2010 PLANT COST	324811.	
1978 WORTH OF	2020 PLANT SALVAGE	102611.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS	486304.	
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	708505.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 50341.



# Carmel Wellfield (MF) 400

WELLFIELD 7  
 TITLE CARMEL WELLS (MF) 400  
 DESIGN FACTORS  
 NUMBER OF WELLS IN FIELD .200E+02  
 DEPTH OF DRILLING .400E+03 FEET  
 DEPTH TO GROUNDWATER .180E+03 FEET  
 DRAWDOWN DURING PUMPING 0. FEET  
 HEAD REQUIRED FOR PUMPING .180E+03 FEET  
 ANNUAL POWER REQUIREMENT .453E+06 KWHR  
 CAPACITY OF PUMPING EQUIPMENT .629E+03 HORSEPOWER  
 MAXIMUM FLOW .200E+02 MGD  
 AVERAGE FLOW .116E+02 MGD

ECONOMIC FACTORS  
 YEAR CONSTRUCTED 1980  
 DESIGN LIFE 25 YEARS  
 INTEREST RATE .663E+01 PERCENT  
 POWER COST .500E-01 \$/KWHR  
 ENR-CC INDEX .268E+04  
 AVERAGE WAGE .750E+01 \$/HR  
 CITY MULTIPLIER .114E+01  
 COST TO DRILL ONE WELL .331E+05 \$  
 COST FOR PUMPING EQUIPMENT .697E+05 \$

## COST SUMMARY

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O. % INFLATION
CONSTRUCTION(\$)	.251E+07	.221E+07	.251E+07
OVERHEAD(\$)	.251E+06	.221E+06	.251E+06
CAPITAL COST(\$)	.276E+07	.243E+07	.276E+07
AMORTIZED(\$/YR)	.229E+06	.202E+06	.229E+06
LABOR(MAN-HR/YR)	.400E+04	.400E+04	.400E+04
LABOR COST(\$/YR)	.300E+05	.264E+05	.300E+05
SUPPLY COST(\$/YR)	.503E+05	.442E+05	.503E+05
POWER(\$/YR)	.453E+06	.399E+06	.453E+06
TOTAL O&M(\$/YR)	.534E+06	.469E+06	.534E+06
AVE ANNUAL(\$/YR)	.763E+06	.671E+06	.867E+06

PERCENT DEPRECIATED

0.

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Carmel Wellfield (MF) 400

1978 WORTH OF	1980 PLANT COST	2428557.	
1978 WORTH OF	2005 PLANT COST	488509.	
1978 WORTH OF	2020 PLANT SALVAGE	74653.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		6545006.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	9387418.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 667003.

1978 WORTH OF	1990 PLANT COST	1278668.	
1978 WORTH OF	2015 PLANT COST	257207.	
1978 WORTH OF	2020 PLANT SALVAGE	149306.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		3188056.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	4574625.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 325040.

1978 WORTH OF	2000 PLANT COST	673236.	
1978 WORTH OF	2020 PLANT SALVAGE	37326.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		1420577.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	2056487.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 146119.

1978 WORTH OF	2010 PLANT COST	354468.	
1978 WORTH OF	2020 PLANT SALVAGE	111979.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		489975.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	732463.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 52044.



# Carmel Wellfield (MF) 900

WELLFIELD 8  
 TITLE CARMEL WELLS (MF) 900  
 DESIGN FACTORS  
 NUMBER OF WELLS IN FIELD .200E+02  
 DEPTH OF DRILLING .900E+03 FEET  
 DEPTH TO GROUNDWATER .180E+03 FEET  
 DRAWDOWN DURING PUMPING 0. FEET  
 HEAD REQUIRED FOR PUMPING .180E+03 FEET  
 ANNUAL POWER REQUIREMENT .453E+06 KWHR  
 CAPACITY OF PUMPING EQUIPMENT .629E+03 HORSEPOWER  
 MAXIMUM FLOW .200E+02 MGD  
 AVERAGE FLOW .116E+02 MGD  
 ECONOMIC FACTORS  
 YEAR CONSTRUCTED 1980  
 DESIGN LIFE 25 YEARS  
 INTEREST RATE .663E+01 PERCENT  
 POWER COST .500E+01 \$/KWHR  
 ENR-CC INDEX .268E+04  
 AVERAGE WAGE .750E+01 \$/HR  
 CITY MULTIPLIER .114E+01  
 COST TO DRILL ONE WELL .448E+05 \$  
 COST FOR PUMPING EQUIPMENT .697E+05 \$

COST SUMMARY  

	COST IN 1978 DOLLARS BUILT IN 1978	COST IN 1978 DOLLARS BUILT IN 1980	COST IN 1980 DOLLARS BUILT IN 1980 W/O. % INFLATION
CONSTRUCTION(\$)	.280E+07	.246E+07	.280E+07
OVERHEAD(\$)	.280E+06	.246E+06	.280E+06
CAPITAL COST(\$)	.308E+07	.271E+07	.308E+07
AMORTIZED(\$/YR)	.255E+06	.225E+06	.255E+06
LABOR(MAN-HR/YR)	.400E+04	.400E+04	.400E+04
LABOR COST(\$/YR)	.300E+05	.264E+05	.300E+05
SUPPLY COST(\$/YR)	.560E+05	.492E+05	.560E+05
POWER(\$/YR)	.453E+06	.399E+06	.453E+06
TOTAL O&M(\$/YR)	.539E+06	.474E+06	.539E+06
AVE ANNUAL(\$/YR)	.795E+06	.699E+06	.904E+06

PERCENT DEPRECIATED 0.

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Carmel Wellfield (MF) 900

1978 WORTH OF	1980 PLANT COST	2709147.	
1978 WORTH OF	2005 PLANT COST	544950.	
1978 WORTH OF	2020 PLANT SALVAGE	83278.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS	6606288.	
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	9777108.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 694692.

1978 WORTH OF	1990 PLANT COST	1426403.	
1978 WORTH OF	2015 PLANT COST	286924.	
1978 WORTH OF	2020 PLANT SALVAGE	166556.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS	3217907.	
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	4764677.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 338544.

1978 WORTH OF	2000 PLANT COST	751021.	
1978 WORTH OF	2020 PLANT SALVAGE	41639.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS	1433878.	
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	2143260.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 152285.

1978 WORTH OF	2010 PLANT COST	395423.	
1978 WORTH OF	2020 PLANT SALVAGE	124917.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS	494562.	
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	765068.	

AVERAGE ANNUAL COST FROM 1978 TO 2020 IS 54360.

## Reservoir Tunnel (MG)

### NACIMIENTO-SAN ANTONIO TUNNEL

Length	9000 ft
Diameter	10 ft
Engineering News-Record Index	2680
Interest rate	6.625 percent
Design life	50 years
Construction cost	224+08 dollars



Reservoir Tunnel (MG)

NACIMIENTO-SAN ANTONIO TUNNEL

YEAR?1980

1978 WORTH OF	1980 PLANT COST	21673179.	
1978 WORTH OF	2020 PLANT SALVAGE	333113.	
1978 WORTH OF	LAND USE FROM 1980 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1980 TO 2020 IS		0.
1978 WORTH OF	ALL COSTS FROM 1980 TO 2020 IS	21340067.	
AVERAGE ANNUAL	COST FROM 1978 TO 2020 IS	1516273.	

YEAR?1990

1978 WORTH OF	1990 PLANT COST	11411224.	
1978 WORTH OF	2020 PLANT SALVAGE	666225.	
1978 WORTH OF	LAND USE FROM 1990 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 1990 TO 2020 IS		0.
1978 WORTH OF	ALL COSTS FROM 1990 TO 2020 IS	10744999.	
AVERAGE ANNUAL	COST FROM 1978 TO 2020 IS	763463.	

YEAR?2000

1978 WORTH OF	2000 PLANT COST	6008165.	
1978 WORTH OF	2020 PLANT SALVAGE	999338.	
1978 WORTH OF	LAND USE FROM 2000 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2000 TO 2020 IS		0.
1978 WORTH OF	ALL COSTS FROM 2000 TO 2020 IS	5008827.	
AVERAGE ANNUAL	COST FROM 1978 TO 2020 IS	355892.	

YEAR?2010

1978 WORTH OF	2010 PLANT COST	3163381.	
1978 WORTH OF	2020 PLANT SALVAGE	1332450.	
1978 WORTH OF	LAND USE FROM 2010 TO 2020 IS	0.	
1978 WORTH OF	ANNUAL OPERATING COST FROM 2010 TO 2020 IS		0.
1978 WORTH OF	ALL COSTS FROM 2010 TO 2020 IS	1830930.	
AVERAGE ANNUAL	COST FROM 1978 TO 2020 IS	130093.	